MINES DEPARTMENT

FOURTEENTH ANNUAL REPORT

OF THE

SECRETARY FOR MINES

for the Year ended 31st December, 1934

AND THE

TWENTY-SEVENTH ANNUAL REPORT

OF

H.M. Chief Inspector of Mines

for the same period

with a Statistical Appendix to both Reports

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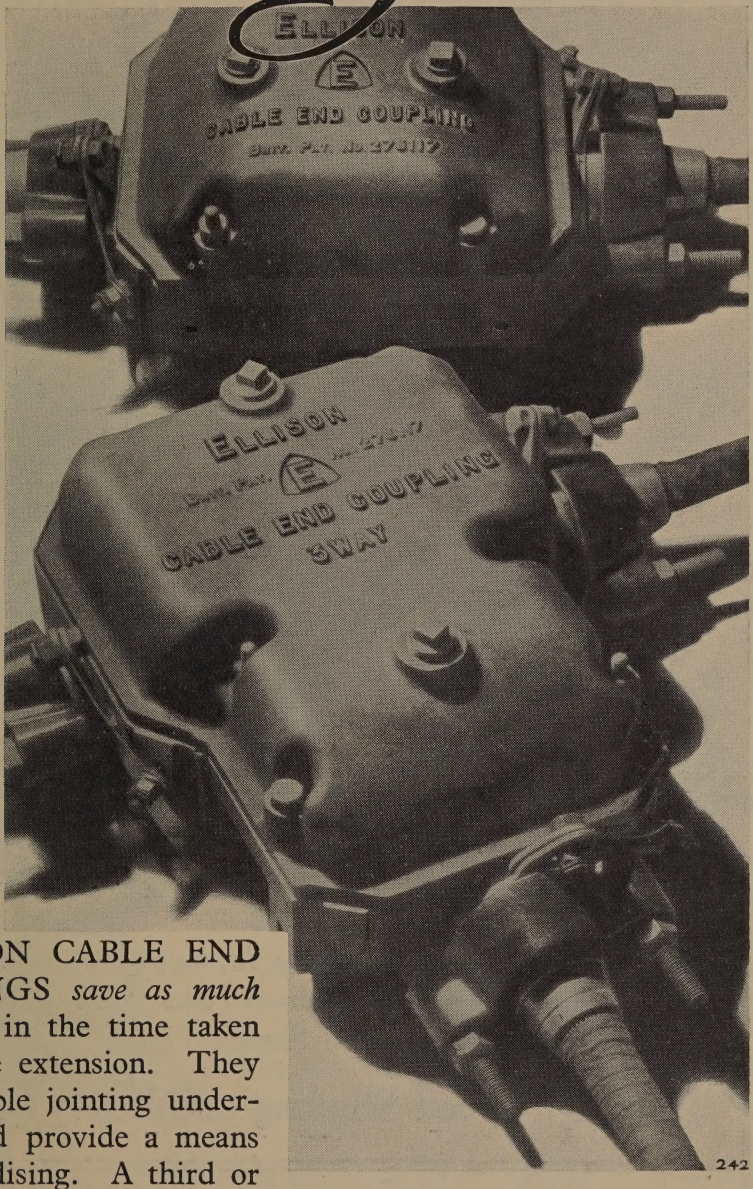

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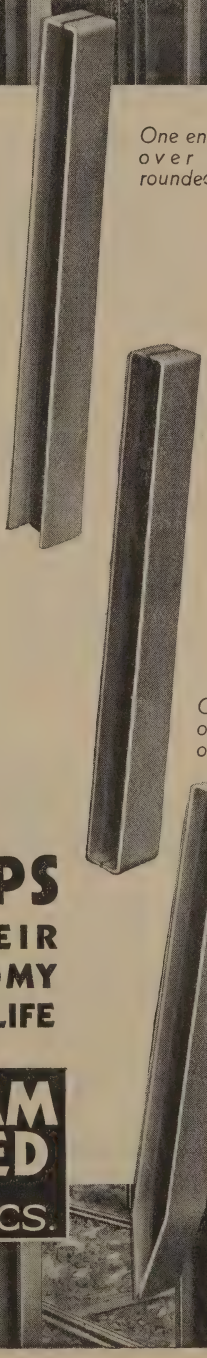

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CONTENTS

FOURTEENTH ANNUAL REPORT OF THE SECRETARY FOR MINES FOR THE YEAR ENDED 31ST DECEMBER, 1934.

PART I

THE COAL MINING INDUSTRY IN 1934

1. General Review

The improvement in the position of the British coal-mining industry which was apparent during the latter part of 1933 continued during 1934. Output in the latter year was higher than in any year since 1930. There was a small increase in Foreign coal shipments (cargo and bunker)—a substantial reduction in cargo shipments to some countries, mainly those with gold currencies, being more than compensated by increased shipments elsewhere. Supplies for home consumption were equal to the average for the years 1930–31.

Work at the pits was more regular than during the previous three years, and there was little change in the number of persons employed when compared with the heavy reduction which occurred between 1929 and 1933. New wage agreements were made in South Wales and North Staffordshire.

There was a further decline in the average pithead price of British coal raised, though smaller in amount than in 1933 or 1932, and the excess of revenue over expenditure was slightly greater than during 1931–33.

During the year statutory effect was given to the proposals of the Central Council providing for separate quotas for inland and export supplies and the co-ordination of district minimum prices; and further trade agreements assuring, amongst other things, a definite share of coal supply to the British industry were concluded with countries abroad.

The most notable event of the year, however, was the conclusion of an agreement by the British and Polish coal-owners for the regulation of supplies and prices in the export market.

World Coal Output.—The estimated world production of coal in 1934 increased by about 8 or 9 per cent. as compared with 1933. Output in Europe, excluding the Soviet Union, rose by approximately 33 million tons to 488 million tons. In the Soviet Union the output of coal and lignite increased by $18\frac{3}{4}$ million tons to $93\frac{1}{2}$ million tons. Production in the Union tends to grow rather faster outside than within Europe. In the United States of America, output rose by 29 million tons to 371 million tons.

A further indication of the improvement in the demand for coal is the reduction during 1934 in the heavy stocks of coal and coke at the pits in Europe. At the end of the year, however, they were still appreciably heavier than in 1929.

With few exceptions, the output of coal in European countries in 1934 was higher than in 1933, but, except in Germany, the increase was slight. The position in the chief Continental countries was as follows :—

Country.	*Output in* 1934. Million tons.	*Increase as compared with* 1933. Million tons.	Per cent.
Germany	123·04	14·85	13·7
France	46·86	0·74	1·6
Poland	28·77	1·85	6·9
Belgium	25·95	1·05	4·2
Saar	11·14	0·75	7·2
Czechoslovakia	10·60	0·24	2·3
Netherlands	12·15	0·23*	1·9*

* Decrease.

Coal Exports and Bunker Shipments from the chief exporting Countries.—Notwithstanding the persistence of serious hindrances to international trade, coal exports (including bunker shipments) from those countries for which information is readily available, increased by 7 million tons, or 7 per cent., between 1933 and 1934, the first upward change since 1930. Exports from Germany increased by $3\frac{1}{2}$ million tons and from the United States of America by nearly 2 million tons. These countries were followed by Poland ($\frac{3}{4}$ million tons increase) and by the United Kingdom (nearly $\frac{2}{3}$ million tons increase). Exports from Belgium, France (including the Saar) and Czechoslovakia also increased, though the improvement in the two last-named countries was small, while from the Netherlands they were slightly lower. The aggregate exports in 1934 from all the countries referred to included 92·17 million tons of coal exported as cargo and 15·84 million tons of bunker coal shipments, the corresponding figures for 1933 being 85·42 million tons and 15·64 million tons, respectively.

Coal exports from Germany (including small quantities of bunkers supplied to non-German vessels) increased from 18·15 million tons in 1933 to 21·59 million tons in 1934. As will be seen below this was due, almost entirely, to increased exports to Italy and to the Netherlands.

Exported to	*Exported in* 1934. Million tons.	*Increase (+) or Decrease (−) as compared with* 1933. Million tons.
Netherlands	5·59	+0·87
Italy	4·77	+2·56
France	3·50	−0·22
Belgium	3·36	+0·08
Other Countries	4·37	+0·15
Total	21·59	+3·44

More than four-fifths of the German export trade was with countries then on the gold standard (including the Netherlands and

Italy), and since 1930 trade with these has declined by 12 per cent. only, contrasting strongly with British coal exports to these markets which have declined by over 40 per cent.

Coal exports from Poland rose from 9 million tons in 1933 to 9¾ million tons in 1934. The changes as compared with 1933 in the chief markets were as follows :—

Exported to	*Exported in* 1934.	*Increase (+) or Decrease (−) as compared with* 1933.
	Million tons.	
Scandinavia and Baltic Sea Countries	3·33	−0·99
Italy	1·53	+0·64
Other gold currency countries*	1·80	+0·47
Irish Free State	0·84	+0·41
Other Mediterranean countries..	0·35	+0·08
Central Europe	1·34	−0·07

Since 1930, Polish coal exports have declined by one-fifth, those to Scandinavia and the Baltic and Central European States having declined by one-half, but substantial compensation was found in the Irish Free State and in countries with gold currencies.

British Coal Output.—220¾ million tons of coal were raised in Great Britain in 1934, nearly 13⅔ million tons, 12 million tons and 1¼ million tons more than in 1933, 1932 and 1931, respectively. This welcome improvement is largely attributable to increased industrial activity at home, particularly in the heavy industries, indications of which were observed during the latter half of 1933.

Output in 1934 was higher in all districts than in 1933, but not to the same degree. The increase was only of the order of 3 per cent. in South Wales and Monmouthshire, Lancashire, Cheshire and North Wales, while it was less than 5 per cent. in Derby, Nottingham and Leicester. Successively greater increases were secured by Yorkshire, " Other Districts,"† Scotland, Stafford, Salop, Worcester, Warwick, Durham and Northumberland. In the last two the increases were nearly 11 per cent. In the main the improvement was attributable to greater industrial activity, but Scotland, Durham and Northumberland, in particular, reaped substantial advantages from the trade agreements effected with certain Foreign countries.

Output in Warwick in 1934 was the highest since 1923, and in Northumberland the highest since 1929; while in the developing coalfield of Kent it was the highest recorded, namely, over 2 million tons.

British Coal Exports.—Shipments of coal (including the coal-equivalent of coke and manufactured fuel, and foreign bunker shipments) recovered almost to the level of 1932. The improvement, though modest, is the first recorded since 1929.

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* Including Germany, France, Switzerland, Belgium and the Netherlands.
† Including Cumberland, Westmorland, Gloucester, Somerset and Kent.

Cargo coal shipments in 1934 amounted to 39·66 million tons, compared with 39·07 million tons in 1933. The quantity of coal shipped for the use of vessels engaged in the foreign trade and of fishing vessels was 13·49 million tons, practically the same as in 1933, while exports of coke and manufactured fuel were slightly lower than in 1933, amounting to 2·19 million tons, and 0·73 million tons, respectively. Altogether, shipments of British coal abroad in 1934, including foreign bunkers and the coal-equivalent of coke and manufactured fuel, rose as compared with 1933 by 0·41 million tons and amounted to 57·09 million tons.

In France, the quota of permitted imports has shown little change from the low level reached in 1933. In Belgium the quota system, after having been virtually abandoned during the first eight months of the year, was restored as from 1st September, but at a much lower operative level (37·7 per cent.) than that in force at the end of 1933 (50·7 per cent.), whilst the tax on domestic coal licences was increased as from 30th June, 1934, to 15 francs per metric ton. Taking the year as a whole, United Kingdom coal exports to Belgium declined by 458,500 tons as compared with 1933. Quota restrictions were imposed by the Netherlands in July, 1934.

Reference may also be made to the setback in coal exports to Germany caused by the general and severe restrictions imposed by the German authorities in the autumn of 1934 on the provision of foreign exchange for payment for imports. Up to August the satisfactory progress made under the operation of the Anglo-German Agreement of 1933 had been continued but this progress was sharply interrupted by a serious falling off in shipments owing to the exchange difficulties during the period August to October. These difficulties were, however, largely overcome by the conclusion of the Anglo-German Payments Agreement of 1st November and it is reassuring to note that a substantial measure of recovery took place in the months of November and December, 1934.

The variation in cargo coal shipments during the past three years (from 38·90 million tons to 39·66 million tons) though small in the aggregate, masks important changes in the direction of trade. These changes are illustrated by the following statement showing the quantity of coal exported to France, Belgium, the Netherlands, Germany, Italy and Switzerland, and the proportion which this quantity formed of the total British coal exports in each of the years 1930–1934 :—

Year.	*Quantity Exported.* Tons.	*Percentage of Total Exports.* %
1930	31,492,000	57·4
1931	24,609,000	57·6
1932	19,712,000	50·7
1933	19,008,000	48·7
1934	17,693,000	44·6

The proportion of total coal exports which went to the remaining markets has increased from about 42½ per cent. in 1930 and 1931, to 55½ per cent. in 1934, and it is apparent that the relative importance of the two groups of countries as markets for United Kingdom coal has changed completely in the course of the past few years, illustrating the injurious effect on United Kingdom trade of the import restrictions adopted in one form or another in the countries of the first group (all of which had currencies linked with gold). An unfortunate aspect of this position is that the loss of trade has occurred in some of the markets most accessible for British coal and is the more serious for that reason.

In this connexion it must not be overlooked that an important factor in the recovery or replacement of lost and diminished markets, and in bringing about the partial redistribution of British coal exports noted above, has been the increase in exports to a number of countries resulting directly or indirectly from those trade agreements concluded since 1932 by H.M. Government which have contained special provisions for improving, or maintaining, the coal trade with this country. The value of these agreements to the British coal export trade is well illustrated by the following statement showing the quantity of coal (including anthracite) exported to Canada, Norway, Sweden, Denmark, Finland, Iceland, Latvia, Lithuania, Estonia and Argentine and the proportion which such quantity formed of the total British coal exports in each of the years 1930–1934:—

Year.	*Quantity Exported.*	*Percentage of Total Exports.*
	Tons.	%
1930	9,179,000	16·7
1931	6,666,000	15·6
1932	8,684,000	22·3
1933	10,498,000	26·9
1934	12,300,000	31·0

The Agreements with Norway, Sweden, Denmark, Iceland and Finland have been particularly valuable. In 1931 imports of United Kingdom coal into these countries amounted to 3,591,000 tons; in 1934 the tonnage was 7,989,000 tons, an increase of 4,398,000 tons.

British coal exports to all other markets have declined substantially since 1930, but they have remained throughout at practically one-fourth of the total British exports.

Reference was made in the Report for 1933 to litigation affecting the importation of coal into Canada and the United States. In regard to Canada the appeal of the five companies who were convicted was unsuccessful and applications were made for leave finally

to appeal to the Privy Council. The trial of five other companies, the hearing of which has been suspended, took place in October and at the end of the year judgment had not been recorded.

During the year the position of British coal imported into the United States of America was considerably clarified. In April the United States Court of Customs and Patent Appeals gave judgment on the appeal referred to in the Report for last year and ruled that coal and coke imported from Great Britain and Germany in 1932 should have been admitted by virtue of the most-favoured-nation clauses of the treaties with those countries free of the $2 tax. The United States Treasury lodged no appeal against this decision. In May a judgment order was issued and it was announced that all refundable import taxes had been or would shortly be refunded. This decision was later extended to coal and coke imported from the United Kingdom in the years 1933 and 1934. Briquettes from certain foreign countries were still adjudged liable to tax. Accordingly, appeal was made on a test case in respect of briquettes imported from Germany, but no decision was reached by the end of the year.

Although the distribution of Foreign cargo and bunker coal shipments amongst the chief groups of ports usually shows little variation from year to year, the position has altered appreciably during the past five years. Shipments from Scottish ports were, actually and relatively, higher last year than in 1930, when the proportion shipped represented only 11·3 per cent. of the whole as compared with 15·5 per cent. in 1934. From the Bristol Channel ports the proportion declined from 38·0 per cent. in 1930 to 35·5 per cent. in 1934. The distribution of Foreign coal shipments elsewhere has shown little change since 1930.

Trade Agreements.—The negotiations with Latvia, Estonia and Lithuania, to which reference was made in the Report for 1933, were continued in 1934 and resulted during the summer in the conclusion of Trade Agreements,* under which the Governments of these countries undertook that they would purchase from the United Kingdom a specified minimum percentage of their country's total importation of coal; namely, Latvia 70 per cent., Estonia 85 per cent. and Lithuania 80 per cent. In the case of Lithuania there was a further provision that imports from the United Kingdom would not in any case be allowed to fall below a minimum of 178,000 metric tons a year. The Lithuanian Government also undertook that the amount of coke imported from the United Kingdom would not be less than 50 per cent. of the total imports of coke into Lithuania. The position of coke was also safeguarded in the Agreements with Latvia and Estonia.

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* Latvia, Cmd. 4753; Lithuania, Cmd. 4680; Estonia, Cmd. 4736.

The following table shows in a convenient form the amount by which coal imports from the United Kingdom may be expected to increase when these Agreements are fully operative.

Country.	Percentage share of Coal Market assured to the United Kingdom under the Agreement.	Estimated gain in comparison with—	
		Year 1931.	Year 1932.
		Metric Tons.	
Estonia	85	43,600	10,600
Latvia	70	320,000	21,400
Lithuania	80	183,000	96,500
Total		546,600	128,500

In this table comparison is made with the years 1931 and 1932 because there is no doubt that, as a result of the tariff policy of the United Kingdom, these countries deliberately increased their trade with the United Kingdom in 1933, in anticipation of the negotiations.

During 1934 negotations were opened with the Government of Uruguay. These negotiations were continued in 1935. Discussions of a limited scope were also undertaken with the Government of Italy with special reference to the position of United Kingdom coal in the Italian market. These discussions had not been concluded at the end of the year.

During the year trade negotiations with France resulted in the conclusion of an Agreement* under the terms of which the French Government guaranteed, for imports of United Kingdom coal falling under the "normal quota," the percentage share then existing. This stabilised the position for all United Kingdom coal imports other than for bunkers, metallurgical supplies and supplementary allocations which are outside the "normal quota." The Agreement provided also for the exchange of specified quantities of United Kingdom coal and French pit-props.

The terms of the Exchange of Notes with the Netherlands of 20th July, 1934,† guaranteed to the United Kingdom the full share of all quotas (including that for coal) which would be mathematically attributable to the United Kingdom by reference to the basic period.

International Agreements.—(a) *Regulation of the Export Market.*—Following on the Resolution of the World Monetary and Economic Conference, to which reference was made in the Report for 1933, a considerable step forward was made during the year in the realm of international agreement among the coal producing countries.

* Cmd. 4632. † Cmd. 4703.

The opening of trade negotiations with Poland afforded the Secretary for Mines the opportunity of initiating discussions between the coal industries of the United Kingdom and Poland with a view to a bilateral agreement between these two countries as a first step towards a wider international agreement between the coal producing countries of Europe. Representatives of the Polish coal industry visited London in April for a conference with representatives of the British coal industry at which various methods of approach to the problem were explored. The conference was adjourned for both sides to report back to their constituents. On the invitation of the British Government the Head of the Mining Department of the Polish Ministry for Industry and Commerce came to London at the time of this meeting and, though he did not take part in the discussions between the representatives of the two coal industries, he had conversations with representatives of the Mines Department at which the ground was explored.

Representatives of the Central Council of Colliery Owners visited Warsaw in November for a further meeting with the Polish representatives. At the suggestion of the Polish Government they were accompanied on their visit by the Under Secretary for Mines, who, while not taking part in the discussions between the industries, kept in touch with representatives of the Polish Government on the subject. Substantial progress was made during the negotiations, which were again adjourned to a later meeting in London in December. At this meeting an Agreement was finally reached.

The provisions of the Agreement are confidential, but they established a relationship between the amount of Polish and British exports and arrangements for consultation as to export prices. It is understood that both sides are conscious of the desirability of extending the Agreement to include other European coal producing countries and the Chairman of the Central Council has stated that no opportunity of dealing with the matter will be neglected.

(*b*) *Hours of Labour Convention.*—A tripartite meeting of Governments, employers and workers concerned, was held at Geneva on 26th/27th June, 1934, with a view to facilitating the simultaneous and early ratification of the Convention limiting hours of work in coal mines which had been adopted by the International Labour Conference in 1931. This Convention was referred to on page 4 of the Annual Report of the Secretary for Mines for 1931 where the main provisions of the Convention are summarised. A number of technical difficulties in connexion with the actual application of the Convention, however, had been reported by some of the countries as constituting practical obstacles to ratification, and the tripartite meeting considered five points which had been put forward by various Governments:

(1) The prohibition of Sunday work.

(2) The maximum daily hours of work of men engaged underground on certain kinds of continuous work.

(3) Preparatory and supplementary work of certain underground store men, enginemen, drivers, &c.

(4) The week-end changeover of shifts for underground fan men and pump men, and

(5) The question of spreadover.

A record of the deliberations of the tripartite meeting was communicated to the Governing Body of the International Labour Office which met in September, and it was decided to ask the Governments for their observations on the five points mentioned above. At the 69th Session of the Governing Body, held in January, 1935, it was decided to place the partial revision of the Convention in respect of the first four points upon the Agenda of the 19th Session of the International Labour Conference to be held in June, 1935.*

Coal used at Home for Industrial, Transport and all other Purposes.—The quantity of coal available for consumption at home for all purposes rose from 148⅓ million tons in 1933 to 161½ million tons in 1934, the highest since 1930 (166½ million tons). The increase is an indication of the improvement in industrial conditions at home. This improvement has been especially notable in the heavy industries, the consumption of coal and coke in the iron and steel trades increasing by nearly 4 million tons between 1933 and 1934. At electricity works belonging to authorized undertakings and to railway and tramway companies the consumption of coal in 1934 was over ¾ million tons greater than in 1933 and at gas works and for locomotive use on railways ½ million tons greater in each case. The increase in the consumption of engine fuel at collieries amounted to only one-tenth of a million tons in spite of an increase of 6½ per cent. in production.

From a consumption of 66 or 67 cwts. per head of population in 1932 and 1933, the quantity rose to 71 cwts. in 1934 compared with 78 cwts. in 1929 and 89 cwts. in 1913.

Coastwise Shipments.—Coastwise (cargo) coal shipments which amounted to 14⅓ million tons in 1925 have risen fairly steadily for some years. They were nearly 18½ million tons in 1930 and 21⅓ million tons in 1934, a figure which exceeds the annual average of shipments during 1909–13 when shipments to places now in the Irish Free State (from 2 to 2½ million tons) were included. The increase since 1930 has been almost entirely confined to the North-East Coast ports (from 10·80 million tons to 12·65 million tons) and Scottish ports (from 3·73 million tons to 4·73 million tons).

Between 1933 and 1934 there was an increase of over 1¾ million tons, of which the North East Coast ports contributed 1⅓ million tons. There was a substantial increase in coastwise shipments to all destinations ranging from 5 per cent. in those to Northern Ireland

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* A draft Convention, revised in respect of these four points, was adopted by the Conference.

to about 11 per cent. in shipments to the West Coast of Britain and to the Thames. Shipments to the latter increased by 1·30 million tons to 13·27 million tons and accounted for nearly two-thirds of the total. The coal used by vessels engaged in the coastwise trade amounted to 1·35 million tons in 1933 and 1·40 million tons in 1934.

Coal Prices : (*a*) *At Pit-head.*—The average net selling value at the pit of all saleable coal raised in 1934, including mine consumption and miners' coal, was 12*s.* 10½*d.* per ton and compares with 13*s.* per ton in 1933 and 13*s.* 7*d.* per ton in 1930 since when the average level of prices has tended slowly downwards.

The course of British coal prices since 1930 is compared below with those of the chief coal-producing countries.

	1930.	1931.	1932.	1933.	1934.
Great Britain	100·0	99·1	97·6	95·8	94·7
Chief coal-producing countries*	100·0	93·5	86·2	86·9	?

* Including Great Britain, Germany, France, Belgium, Poland and the United States of America.

Foreign currencies for this purpose have been converted at the old parity of sterling, except the American dollar in 1933, and the results shown above correspond with the internal, rather than the external value of coal. It will be seen that the average net selling value of all British coal raised has fallen by 4 per cent. between 1930 and 1933, whereas the world level has fallen by 13 per cent.

The recovery in prices in Scotland indicated in 1933 was maintained in 1934 and there were increases in prices in Bristol and Salop. In all other districts prices in 1934 were lower and in many of these districts the fall has been continuous for two to five years.

(*b*) *Export Values* (*f.o.b.*)—Generally speaking, the average prices of the several qualities of coal exported have tended to decline since 1930, the exceptions being large anthracite and thro' and thro' steam coal, representing together about one-ninth of the total quantity exported last year. The price of the former has risen steadily since 1928 and the latter since 1931. There was a continued fall in the price of sized anthracite, large steam coal, thro' and thro' gas coal, and small steam coal. These qualities accounted for more than one-half of the total exports in 1934. On the other hand, the fall in prices of other qualities of coal and anthracite exported was checked and a small increase of price was recorded last year. The increase between 1933 and 1934 amounted usually to 2*d.* to 4*d.* per ton f.o.b., but the price of large anthracite rose by 7*d.* per ton, and that of sized anthracite fell by 9*d.* per ton, f.o.b.

On the whole, after making allowance for changes in the proportion of the various qualities exported, anthracite in 1934 was slightly lower in value compared with 1933, and coal, other than anthracite, fractionally higher, while, as compared with 1930, there has been a fall of about 1*s.* per ton f.o.b., on the average.

Since 1930 there has been a general depression of the price level in foreign markets. In terms of national currencies German and Polish export coal values in 1934 were about one-eighth lower than in 1933, while since 1930 Polish export values have declined by two-fifths and those of Germany have been more than halved. The reduction in values since 1930 in the case of Poland corresponds to, and in the case of Germany exceeds, the decline in British values in terms of gold.

Amalgamations.—Three further schemes of amalgamation were completed during 1934. Since the passing of the Mining Industry Act, 1926, therefore, 41 schemes (reduced by subsequent amalgamations to 32) have been carried through, affecting 390 pits or levels normally employing about 251,600 workers. In addition, three other schemes of a similar nature, though not strictly amalgamations, were effected during 1934. Two companies in South Yorkshire combined their coke oven businesses; an amalgamation scheme of 1929, under which ten colliery companies in central Lancashire passed under single ownership, was completed by the total absorption of Bridgwater Collieries, Limited; and in North Staffordshire 15 undertakings, representing about 90 per cent. of the total district output, subscribed to a new company, with power to acquire minerals, mineral rights and workings, and to close or otherwise deal with any colliery so acquired. All the above schemes were completed without recourse to the Railway and Canal Commission.

Employment.—Following the period 1929–33 during which the average number of persons employed in the industry declined by about 40,000 per annum the average number in 1934 fell by less than 1,000 as compared with 1933, namely, from 789,100 to 788,200. During the summer and autumn of 1934 the numbers employed were higher than in 1933, but after October they were lower and at the end of the year the total number in employment was 784,800 as compared with 793,900 at the end of 1933. The number of boys and girls under 16 years of age increased by about 4,000, increases having been previously recorded in the post-war period in 1929 and 1923.

Coal was wound at the pits on 241 days, on the average, comparing with 230¼ days in 1933 and 226½ days only in 1932. This was the highest figure since 1930.

About eight weeks, on the average, were lost at the mines through want of trade, an improvement of nearly two weeks compared with 1933. The effects of seasonal trade were most pronounced in Yorkshire, Lancashire and the Midland counties where the loss amounted to 13¼ weeks compared with 3½ weeks in the remaining districts. The corresponding figures in 1933 were 15¼ weeks and 5¼ weeks, respectively.

Combining the number of persons employed and the number of days on which coal was wound, the volume of employment was 4¼ per cent. greater than in 1933.

Use of Machinery Below-ground.—The quantity of coal cut by machines in 1934 was 103,701,000 tons and the quantity conveyed mechanically was 81,493,000 tons, 47 per cent. and 37 per cent., respectively, of the total tonnage of coal raised.

The provision of mechanical conveyors and gate-end loaders in recent years has increased more rapidly than that of machines for coal-getting. In 1928, the earliest year for which comparative particulars are available, the proportion of the total output cut by machines and mechanically conveyed was, respectively, 26 per cent. and 12 per cent.

A small number of mechanical picks are used for getting down coal undercut by machines and a larger number of picks are used independently. But the quantity of coal obtained independently by mechanical picks is still relatively small and amounted to only $5\frac{3}{4}$ million tons in 1934.

The preference at home for under-cutting machines and the neglect of mechanical picks contrasts strikingly with practice on the Continent where the use of the former, which was never extensive, has largely given place to the latter. Thus, in the Ruhr coalfield, only 7 per cent. of the output in 1934 was obtained by coal-cutters in combination with picks, while 90 per cent. was got with mechanical picks alone. In Belgium the corresponding proportion in 1933 was over $91\frac{1}{2}$ per cent. (out of $96\frac{1}{2}$ per cent. obtained with mechnical assistance), and in France 86 per cent. in the Pas-de-Calais, and 98 per cent. in the Nord, districts.

The increased provision of mechanical conveyors in Great Britain relative to the increase in the provision of coal-cutting machines has had an important bearing upon the rate of output per unit of labour. Comparisons with earlier post-war years are affected by various changes in the hours of labour below-ground; but making an approximate allowance for this the output of mineral (chiefly coal) per 1,000 manshifts of $7\frac{1}{2}$ hours at mines under the Coal Mines Act, 1911, has been as follows:

Period (or year).	*Tonnage of Mineral per 1,000 manshifts worked.*		
	Below-ground.	*At the coal face.*	*Elsewhere Below-ground.*
1922–25	1,220	2,454	2,429
1927–30	1,302	2,553	2,655
1931–33	1,421	2,785	2,900
1934	1,492	2,924	3,046

As compared with 1922–25 the rate of output at the face has increased by 19 per cent. and the rate of throughput elsewhere below-ground by $25\frac{1}{2}$ per cent.

The provision of more and better machines, however, is but one of several factors tending to raise the output rate. Since 1930 the output of coal per manshift worked below and above-ground in this country has increased by 6 per cent., whereas in Belgium

the increase has been relatively 3½-times, in Germany, France and the Netherlands 5-times, and in Poland no less than 7-times, as great.

To take one, and an outstanding illustration of the economies effected, namely, the Ruhr coalfield, the output rate is 23½ per cent. higher than it was in 1930 although no important change has occurred meanwhile in the provision of coal-getting machines. But whereas the number of working-faces at the end of 1933 was 4,320 there were approximately three times as many at the end of 1929.

Much greater integration amongst undertakings in this coalfield has led to the greatest exploitation of the most productive seams and important economies have been secured in the effective working-time below-ground by the introduction of a definite order in winding, reduction of rest pauses, provision of mechanical haulage for workmen and the shortening of travelling roads. It is estimated that by 1930 the effective working time below-ground was equal to that in 1913 although the working day was half an hour shorter.

2. Fuel Treatment and Utilisation.

Production of Oil Products from Coal and other Indigenous Materials.—The question of the production of oil products from coal, shale and peat indigenous to this country or from substances derived therefrom has attracted much attention during the past few years and the action which has been taken by the Government to stimulate these developments was referred to in the last two Annual Reports.

Benzol, obtained by the scrubbing of gas produced at coke ovens and gas works, has for many years provided a not unimportant contribution to the increasing needs of this country for motor fuel, while a proportion of the creosote, the lighter fraction of the tar produced at these works, has been used as a fuel oil. These substances are, however, by-products of the gas and coke oven industries and their supply is to a large extent dependent on the demand for the main products of those industries. Some gas works which have hitherto not recovered the benzol from the gas are, however, installing plants, and there are possibilities of increasing in some measure the yield per ton of coal carbonised, particularly at coke ovens.

The shale oil industry, unfortunately, materially contracted in size as compared with several years ago, also makes a useful contribution of both motor spirit and heavy oils.

By the carbonisation of coal at substantially lower temperatures than are used at gas works or coke ovens, the yield of tar per ton of coal can be materially increased. The tar is more suitable than high temperature tar for the production of motor spirit and heavy oil, while the motor spirit scrubbed from the gas also possesses certain advantages over benzol as a motor fuel, particularly for aviation purposes. At present the production of spirit and tar, by the carbonisation of coal at low temperatures in this country, is only a

small fraction of that produced by gas works and coke ovens, but is slowly increasing. The wider adoption of low temperature carbonisation would result in a steady increase in the yield of both home-produced motor spirit and heavy oils. Nevertheless, here too, the main product of the industry is not tar or oil, but a solid free-burning smokeless semi-coke, so that the expansion of the industry will depend on an increasing demand for this solid fuel.

There seems to be a possibility that in the future both of the older carbonisation industries may explore more fully the possibilities of carbonising at least a proportion of their coal at lower temperatures, in order partly to produce a freer-burning fuel for the open domestic fire, and partly to secure the preference given to home produced motor spirit and heavy oil.

A more recent development, which may offer the best hope of securing a substantial increase in the production of oil products from coal, is now making progress in this country. In the autumn of 1933 work was begun on the construction of the first commercial scale plant for the production of motor spirit from coal by the hydrogenation process. At first designed to treat coal only, the plant was, during the course of construction, extended to treat creosote and low temperature tar as well, and in February, 1935, the production of motor spirit from creosote was commenced. By the middle of July, 6 million gallons of first-grade motor spirit had been marketed and the coal units were being brought into operation.

If the results of this commercial scale experiment prove to be satisfactory there is obviously a wide field in this country for the further development of the process, for the present rate of consumption of motor spirit is approximately 1,200 million gallons, or about 4 million tons per annum. As the production of oil products is the main object of the process, the rate of progress will not be hampered by difficulties of disposing of other products in competition with similar commodities already produced here.

Production of Light Oils.

In the British Hydrocarbon Oils Production Act, 1934, provision was made to enable the Mines Department to obtain from all producers of light hydrocarbon oils* particulars of the home production of such oils. Those concerned have also supplied information in regard to the production of heavy oils and for the first time official statistics are available which make it possible to give a reasonably complete picture of the production of oil products from materials indigenous to this country.

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* Light hydrocarbon oils are defined by Section 2 (3) of the Finance Act, 1928, as follows :—" Light oils " means hydrocarbon oils of which not less than 50 per cent. by volume distils at a temperature not exceeding 185° C., or of which not less than 95 per cent. by volume distils at a temperature not exceeding 240° C., or which give off an inflammable vapour at a temperature of less than 22·8° C., when tested in the manner prescribed by the Acts relating to petroleum.

While a wide field of inquiry has been covered, the information received, which may not be quite complete, indicates that the total production of refined light oils, coming within the statutory definition, obtained at gas works, coke ovens, tar distilleries and low temperature carbonisation works, from coal, coal tar and tar oils, amounted to approximately 50 million gallons. Of this about 40 million gallons were returned as refined motor benzol. The other 10 million gallons were described as 90's benzol, 50's benzol, 90's toluol, pure benzine, pure toluene, pure xylene and solvent naphtha.

About $14\frac{1}{2}$ million gallons of motor spirit and naphtha were produced by the Scottish shale oil industry, which, with the 40 million gallons of refined motor benzol, made for 1934 a total of $54\frac{1}{2}$ million gallons of home produced motor spirit.

It is not possible to make a direct comparison of this figure with the production in previous years, for which the information available was based on estimates furnished by trade organisations. This information indicated that the production of refined motor benzol and shale spirit in the years 1930 to 1933 amounted to $38\frac{1}{2}$, $37\frac{1}{2}$, $38\frac{1}{2}$ and $44\frac{1}{3}$ million gallons, respectively. Even if allowance be made for some difference due to a change in the bases of the statistics there was a substantial increase in 1934 over the previous years.

This increase was mainly due to the greater activity at coke ovens owing to the higher demand for metallurgical coke, and, as coke ovens, carbonising 97 per cent. of the total coal treated at these works, have by-product recovery plants installed, any increase in the quantity of coal carbonised at once results in a larger production of benzol. But the information available indicates quite a wide variation in the yield of benzol per ton of coal treated. The average yield of crude benzol was about 3 gallons per ton of coal carbonised. There are a number of works which return a higher figure than this and if all works were brought up to the level of those showing the higher yields quite a substantial increase in the total production would result. It is known that some coke-ovens have recently installed new equipment with the object of increasing the yield of benzol.

At gas works the proportion at which benzol is recovered is much smaller. On the basis of coal carbonised those which take out the benzol represent $37\frac{1}{2}$ per cent. of the total, as against $97\frac{1}{2}$ per cent. in the case of coke ovens. The average yield of crude benzol is also lower at about 2 gallons per ton of coal. To some extent the considerations which govern the recovery of benzol at gas works are different from those which apply in the case of coke ovens; but there has been an increasing production of benzol at gas works in recent years due in a large measure, it is believed, to the preference accorded to home-produced motor spirit.

Of the total production of crude benzol at coke ovens, gas works, low temperature carbonisation works and tar distilleries, about

80 per cent. was obtained from the gas and 20 per cent. from the distillation of tar.

Production of Heavy Oils.

At present the main source of supply of home-produced heavy oils, capable of being used as a fuel oil, is creosote. The shale oil industry formerly supplied appreciable quantities, but with a larger proportion of motor spirit the output of heavy oils has fallen considerably. The information supplied voluntarily by those who were required to furnish particulars of the production of light oils shows that in 1934 about 90 million gallons of creosote and heavy oils were produced in this country from coal tars obtained from the carbonisation of coal and from the shale industry.

Based on estimates furnished by the trade in respect of the years 1930 to 1933, the output of creosote and heavy oils was approximately 91, 77, 62 and 72 million gallons, respectively. Not all the creosote is available for use as a fuel oil. A considerable proportion of the output is used in this country for other purposes and some is exported. As indicated also on pages 16 and 22, substantial quantities are intended to be used for the purpose of making motor spirit by the hydrogenation process.

Although it is possible to make a fuel oil from coal by the hydrogenation process, no supplies on a commercial scale have yet been produced in this country.

Effect on home-produced fuels of tax on imported Heavy Oils.—The duty of 1d. per gallon on imported heavy petroleum oils which was first imposed in the Finance Act, 1933, was continued in the Finance Act, 1934. Information has been furnished to the Department by the Coal Utilisation Council and other trade organisations which shows that since the duty was imposed in April, 1933, and down to February, 1935, there had been conversions from oil to coal, coke, gas, electricity and coal oil, and business retained, which, but for the duty, would have been lost to oil, amounting, in terms of coal, to an annual rate of consumption of 1,190,000 tons. This tonnage represents employment for about 4,250 miners.

Mechanical Coal Cleaning.—The preparation of coal for the market by means of mechanical cleaning processes continues to make considerable progress. In 1934, nearly 87½ million tons of coal, or 39½ per cent. of the total saleable output, were mechanically cleaned as compared with about 77½ million tons, or 37½ per cent. of the total saleable output in the previous year. A very large proportion of the output of coal which is generally suitable for cleaning, *i.e.*, fine or small coal, is therefore now so treated.

Washing continues to be the most used method of treatment, and nearly 74 million tons, or 84 per cent. of the total tonnage

cleaned in 1934, were so treated as compared with about 13½ million tons, or 15 per cent., passed through dry cleaning plants. In last year's Report, reference was made to the progress in the establishment of dry cleaning plants and this progress continues. The increase in the tonnage of coal which passed through dry cleaning plants in 1934 as compared with the previous year was 21 per cent., as compared with an increase during the same period of 11½ per cent. in the tonnage of coal which passed through washing plants.

With the exception of three small districts, all districts show increases in the tonnages of coal treated by cleaning plants. Especially large increases occurred in Durham, South Yorkshire and South Wales. During the year more than half the saleable output, and, therefore, a very much greater proportion of the coal suitable for cleaning, was cleaned in the districts of Cumberland and South Yorkshire and the Lothians and Fifeshire areas of Scotland. 49 per cent. of the total saleable Scottish output was mechanically cleaned during the year.

Full particulars showing for each district the quantities of coal mechanically cleaned are given in Table 7 of Appendix A.

Pulverised Fuel for Industrial Use.—Consumers of pulverised fuel have again supplied the Department with information regarding the use of pulverised fuel during 1934. The following table shows consumption during the years 1929–34, classified according to the kind of undertaking. It will be seen that marked progress has been, and is still being, made in the use of this type of fuel :—

——	1929.	1930.	1931.	1932.	1933.	1934.
	Tons.					
For Steam Raising:						
(*a*) By Collieries ..	229,304	304,064	374,252	462,738	479,112	551,469
(*b*) By Commercial Firms	525,843	452,623	477,820	613,200	630,020	589,644
(*c*) By Authorised Electrical Undertakers*	714,513	941,021	1,055,318	1,206,254	1,455,178	1,630,000 †
For Heating:						
(*a*) In Metallurgical Furnaces, etc. ..	41,077	45,298	43,554	50,049	87,432	129,170
(*b*) In Cement & Other Kilns	1,244,421	1,373,127	1,473,033	1,346,763	1,363,988	1,602,422
Total	2,755,158	3,116,133	3,423,977	3,679,004	4,015,730	4,502,705

* The particulars for Local Authorities relate to the year ended 31st March of the year following that shown.

† Provisional figure subject to correction.

The number of undertakings, apart from the cement industry, furnishing particulars in respect of the years 1932, 1933 and 1934, was as follows :—

	1932.	1933.	1934.
For Steam Raising :			
Colliery Companies	26	29	32
Other Commercial Firms.	28	29	35
Authorised Electrical Undertakers..	20	20	22
For Heating Purposes :			
Metallurgical firms	38	55	78
Total	112	133	167

The consumption of pulverised fuel in 1934 exceeded 4½ million tons, an increase of 12·3 per cent. over 1933 and of 63·4 per cent. over 1929, the first year for which statistics were collected. The continued growth in the use of this fuel by the metallurgical industry for heating or reheating billets, etc., smelting and melting, annealing, and copper refining is noteworthy, the increase being 47·7 per cent. over 1933, while since 1929 the consumption has more than trebled. The number of firms in this industry supplying information rose from 55 in 1933 to 78 in 1934, and the number of separate installations from 62 to 80.

As regards the use of pulverised fuel for steam raising, the following Table is of interest in showing the quantities utilised according to the type and size of boiler :—

Type of Boiler and Size.	Quantity of Coal Consumed.			
	At Collieries.	At Commercial Firms.	At Authorised Electricity Under-takings.	Total.
	Tons.			
Lancashire	113,380	6,617	—	119,997
Scotch Marine	—	3,882	—	3,882
Water Tube :				
Up to 15,000 lbs./hr. ..	26,842	38,096	—	64,938
15,001–30,000 ,, ..	149,682	36,942	9,800	196,424
30,001–50,000 ,, ..	261,565	70,910	13,300	345,775
50,001–75,000 ,, ..	—	16,380	162,800	179,180
Over 75,000 ,, ..	—	416,817	1,444,100	1,860,917
Total in 1934 ..	551,469	589,644	1,630,000	2,771,113

The above figures show that 95 per cent. of the total consumption of pulverised fuel for steam raising takes place in water-tube boilers,

and that 67 per cent. is consumed in boilers of over 75,000 lbs. per hour capacity.

It was recorded in the last Report that a plant had been established at a colliery in South Yorkshire for supplying powdered fuel ready for use to small consumers. Some progress was made in this direction during 1934. A second plant has been installed in the London area, from which supplies have begun to be distributed by tank wagon.

An interesting development in the use of powdered coal for other than fuel purposes has come to the notice of the Department. The powdered coal is used as "blackings" on castings and is mixed with water to form a coating for a mould, such as an iron casting used in the manufacture of cast-iron. Several hundreds of tons of pulverised coal were used for this purpose by three firms during the year.

Low Temperature Carbonisation.—The quantities of coal distilled at low temperature carbonisation plants working on a commercial or semi-commercial scale, and the yields of products for the four years 1931–1934 were as follows :—

——	Unit.	1931.	1932.	1933.	1934.
	(i) Total Quantities				
Coal distilled ..	Tons	214,097	222,616	317,703	284,242
Products:					
Semi-coke ..	Tons	151,729	162,797	222,245	220,793
Gas*	1,000 cu. ft.	1,744,200	1,287,000	2,112,195	1,479,900
Tar	Gallons	3,118,131	3,091,537	4,899,820	4,693,832
Crude Spirit from gas ..	Gallons	374,390	429,755	741,177	767,438
	(ii) Production per Ton of throughput.				
Products:					
Semi-coke ..	Cwts.	14·2	14·6	14·0	15·5
Gas	Therms	33·0	32·1	34·4	33·3
Tar	Gallons	14·6	13·9	15·4	16·5
Crude Spirit from gas† ..	Gallons	1·7	1·9	2·3	2·7

* The yield of gas varies widely according to the process and the kind of coal treated.

† Spirit is not "scrubbed" from the gas at all plants. The average yields calculated on the coal distilled at the plants where the gas is "scrubbed" are as follows: 1·9 gallons per ton of throughput in 1931, 2·2 gallons in 1932, 2·7 gallons in 1933 and 2·9 gallons in 1934.

As in the previous year, nine plants were in operation, but the amount of coal carbonised decreased by 33,461 tons or 10·5 per cent.

Nearly the whole of this decrease occurred at one plant. The output of smokeless fuel, however, shows a decrease of only 1,452 tons or 0·7 per cent., while the yield of crude spirit has actually increased by 26,261 gallons or 3·5 per cent. At those plants where the gas is scrubbed, the average yield increased from 2·7 to 2·9 gallons per ton of throughput.

Nine Royal Air Force Stations in the United Kingdom which comprise 15 squadrons and one flying training school, are using a mixed fuel of which petrol distilled from British coal is a large ingredient. The Air Council have always given encouragement to the distillation of petrol from British sources, and they have stated that they will continue to do so in so far as the fuel is suitable for the requirements of the Service.

Hydrogenation.—Reference was made in the last Report to the erection of a hydrogenation plant on a commercial scale by Imperial Chemical Industries, Limited, at Billingham-on-Tees, following the decision of the Government to guarantee a preference on motor spirit produced from indigenous materials.

The original intention of the Company was to erect a plant for the production of 100,000 tons (30,000,000 gallons) of motor spirit from coal per annum at a capital cost of £2½ million, excluding certain plant already installed and available. During the year the Company decided to extend the capacity of the plant at a cost of about £½ million for the production of motor spirit from tars obtained by the high and low temperature carbonisation of coal. The extension will increase the capacity of the plant 100,000 tons (30,000,000 gallons) to 150,000 tons (45,000,000 gallons) of motor spirit per annum.

During the year good progress was made in the erection of the plant and it has been stated that at the peak period the numbers employed in direct and secondary employment amounted to 13,000 persons.

The first unit of the Billingham plant for converting coal tar creosote into petrol commenced operations in February, 1935, and by July the coal units were being brought into operation. Some months must elapse before the results of this commercial scale experiment can be determined.

Use of Compressed Gas for Motor Transport.—In the last Report reference was made to concessions in taxation made for vehicles driven by compressed gas, to the issue of Regulations by the Home Office and Ministry of Transport, respectively, in connexion with the safety of the cylinders and their filling and use, and to the opening at Chesterfield of the first public filling station for vehicles using compressed gas. During 1934 experiments have continued to be carried out and a few other filling stations have been established.

In May, 1934, a Committee of the National Gas Council issued a Report in which it was claimed that the technical problems of the

use of compressed gas as a fuel for motor transport had been solved and that in certain circumstances (*e.g.*, high annual mileage and short idle time for compression plant) its use was competitive with the petrol-driven vehicle.

The small range of action of a gas-driven vehicle, and, in the absence of a sufficient number of filling stations, the necessity for returning to its depot for recharging, are factors which of necessity make development slow. The rapid development of the diesel engine for heavy motor vehicles, giving higher efficiencies than the petrol-driven vehicle, presented a further difficulty. This has to some extent been met by the increase in the tax on imported heavy oil used in road vehicles from 1*d.* to 8*d.* per gallon imposed by the Finance Act, 1935.

The latest information available shows that only eleven gas fuel vehicles—one passenger and ten goods—have been licensed.

Use of Surplus Coke Oven Gas.—The South Yorkshire Gas Grid has continued to make progress during the year under review. Further coke ovens have been linked up and the sales of gas constituted a record. In order to safeguard itself against unfair competition, the Company promoted a Bill in Parliament, which became the Sheffield Gas Act, 1934. Under this Act a coke oven owner is prohibited from supplying gas directly to consumers within the Company's area except to works owned or controlled by him.

Details of the gas generated at coke ovens in this country during 1934 are given in Table 32 of Appendix A. The total quantity generated was 177,070 million cubic feet as compared with 137,492 million cubic feet in 1933. A large proportion of this was used by the coke ovens and ancillary undertakings, or was sold direct to industrial users. The quantity sold to gas undertakings increased from 15,941 million to 18,052 million cubic feet. The balance not accounted for was just over 2 per cent.

3. Part I of the Coal Mines Act, 1930.

(1) Amendments of Schemes.

(a) *General.*—The year 1934 marked the amendment of the Schemes in force under Part I of the Coal Mines Act, 1930, to provide for separate allocations for the inland and export trades and for the inter-district co-ordination of minimum prices. The *impasse* with regard to amendments referred to in last year's Report (page 20) continued during the early months of the year and on 15th March, 1934, the Government introduced a Bill to amend Part I of the 1930 Act so as to free export coal from quantitative regulation and to confer on the Central Council the power of co-ordinating district minimum prices. The Bill was given a second reading on the 28th March and during the debate the Secretary for Mines intimated that it was even then not too late for the industry to move in the

matter. Shortly afterwards assurances were received from the Central Council and each District Executive Board that representations would be made under Sections 2 (4) and 3 (4) of the 1930 Act, to provide for the amendments that the Government had primarily indicated as essential. On the 24th April it was announced in the House of Commons that further proceedings on the Bill would be suspended. On receipt of the promised representations from the industry the necessary draft orders were laid before both Houses of Parliament. These orders were duly approved and on 27th June the Secretary for Mines made the Central (Coal Mines) Scheme (Amendment) Order, 1934, for the amendment of the Central Scheme, and similar orders for the amendment of the District schemes were made on 16th July. The detailed amendments of the schemes implementing those orders became operative from 1st January, 1935.

(b) *Amendments to District Schemes.*—The principal amendments in the district schemes made during the year, apart from those referred to in the previous paragraph, may be summarised as follows* :—

Midland (Amalgamated) District.—In an attempt to reduce the number of standard tonnage arbitrations in this district the Scheme has been amended to give each section a choice of method of arbitration. Appeal Procedure A provides that where an owner in the section appeals against the output standard tonnage of his coal mine, the standard tonnages of all the mines in the section are referred to one arbitrator, whose award remains in force, and not subject to variation, for a period of twelve months. At the expiration of that period, if an owner applies for a revision of the output standard tonnage of his coal mine, all the output standard tonnages for the section are again referred to the arbitrator. The alternative to this procedure, Appeal Procedure B, is substantially the same as that which has been in operation in the district since 1931. Sections have the right of changing, at stated intervals, from one procedure to the other.

South Wales.—An amendment of the South Wales District Scheme, operative from 1st January, 1935, is designed to ascertain whether, in the case of any shipment of coal sold otherwise than f.o.b., the coal has been sold below the minimum price for the time being in force. The amendment provides that the additional costs and charges (*e.g.*, freight and insurance) to be deducted from the price charged to the buyer shall not be less than those which at the time the contract was made might reasonably have been expected to be incurred.

Durham.—In order to meet a report by the Durham Committee of Investigation, referred to below, the provisions of Clause 44 of the

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* These amendments are referred to in greater detail, and a more detailed review of allocations and outputs in the first three quarters of the year 1934, than that given herein is included, in the Report by the Board of Trade under Section 7 of the Coal Mines Act, 1930, on the Working of Schemes under Part I of the Act during the year 1934. (Cmd. 4769.)

Durham Scheme were amended so as to provide for greater elasticity with regard to the revision of output standard tonnages. The Scheme was also amended so as to confer on the Executive Board from the 1st January, 1935, the power to prescribe in any conditions of sale the rate of remuneration of agents or subsidiary companies.

Cannock Chase and Kent.—Amendments were made to the Cannock Chase and Kent Schemes, in order to strengthen the powers of the Executive Boards in dealing with evasions of minimum prices.

(2) Regulation of Output.

Statistics of allocations and outputs by districts for each of the quarters are given in the table on page 26.

The total allocations made by the Central Council during the year amounted to nearly 231½ million tons. Total output during the year, as returned by the Executive Boards to the Central Council, amounted to nearly 226 million tons. The margin by which total output fell short of the sum of allocations was 2·34 per cent., the lowest so far recorded. Similar margins in previous years were in 1931, 5·57 per cent., in 1932, 9·6 per cent., and in 1933, 3·78 per cent. The reduction in the margin in the last two years is without doubt due to the policy adopted by the Central Council of making an initial allocation and leaving it to the districts, during the course of the allocation period, to justify additional allocations to meet a proved demand.

(3) Minimum Prices.

In the past minimum prices could be fixed district by district without any attempt to determine them with regard to a common standard. The result was ill feeling and evasion. In some districts attempts were made to deal with evasions, but in the meantime the fundamental defect persisted. As indicated above the Central Scheme has now been amended to provide for the inter-district co-ordination of minimum prices. From the 1st January, 1935, the Central Council may enquire into any complaint made by any Executive Board regarding any act or omission of any other Executive Board in relation to the determination and enforcement of minimum prices and may give such directions as it may think fit to remedy the matter, the directions so given being enforceable by penalties.

It should be recorded that discussions have been proceeding between representatives of the Lancashire, Cheshire, North Staffordshire and North Wales Districts with regard to the co-ordination of prices for certain classes of coal and it is reported that a considerable measure of agreement has been reached.

Statement showing Allocations made by the Central Council and Outputs of the various Districts during the Year 1934.

District.	March Quarter.		June Quarter.		September Quarter.		December Quarter.		Totals for the Year.		
	Allocation.	Output, as returned by the Executive Boards to Central Council.	Allocation.	Output, as returned by the Executive Boards to Central Council.	Allocation.	Output, as returned by the Executive Boards to Central Council.	Allocation.	Output, as returned by the Executive Boards to Central Council.	Allocation.	Output, as returned by the Executive Boards to Central Council.	Percentage by which Output fell short of Allocation.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	%
Northumberland...	3,712,544	3,637,863	3,669,656	3,610,183	3,632,086	3,635,446	3,842,914	3,824,398	14,857,200	14,707,890	1·00
Durham	8,412,741	8,256,182	8,035,249	7,907,121	7,725,000	7,669,626	8,400,859	8,354,531	32,573,849	32,187,460	1·19
Cumberland ...	447,928	443,284	457,331	437,111	441,500	440,198	490,491	478,241	1,837,250	1,798,834	2·09
Lancashire and Cheshire ...	3,967,382	3,905,982	3,417,227	3,369,417	3,076,258	2,976,320	3,764,424	3,641,949	14,225,291	13,893,668	2·33
Midland Amalgamated...	19,549,742	19,574,605	16,155,554	15,738,588	16,028,033	15,652,240	18,887,667	18,336,457	70,620,996	69,301,890	1·87
Shropshire ...	170,003	170,231	164,173	162,769	159,987	155,769	169,759	166,907	663,922	655,676	1·24
NorthStaffordshire	1,767,200	1,778,994	1,538,137	1,520,562	1,410,000	1,401,178	1,767,636	1,727,402	6,482,973	6,428,136	0·85
South Staffordshire andWorcestershire	419,912	414,171	376,486	365,271	382,008	367,931	399,085	385,226	1,577,491	1,532,599	2·85
Cannock Chase ...	1,497,705	1,484,747	1,134,467	1,126,040	1,054,895	1,018,817	1,356,749	1,283,273	5,043,816	4,912,877	2·60
Warwickshire ...	1,404,721	1,396,459	1,172,672	1,166,833	1,194,410	1,193,948	1,297,671	1,297,616	5,069,474	5,054,856	0·29
Forest of Dean ...	335,401	332,551	271,138	264,634	267,799	267,073	338,874	332,695	1,213,212	1,196,953	1·34
Bristol	47,656	46,743	47,321	44,428	44,711	43,749	47,865	46,707	187,553	181,627	3·16
Somerset... ...	203,686	198,303	177,119	156,131	175,589	157,619	194,000	182,831	750,394	694,884	7·40
Kent	571,660	569,683	570,000	554,330	549,079	540,330	552,317	546,856	2,243,056	2,211,199	1·42
North Wales ...	837,442	784,766	754,484	741,746	748,733	719,801	784,852	652,808	3,125,511	2,899,121	7·24
South Wales and Monmouthshire	10,129,765	9,934,476	9,420,496	8,776,788	9,375,611	8,933,537	9,802,324	9,304,728	38,728,196	36,949,529	4·59
Scotland	8,204,838	8,074,393	7,936,150	7,710,470	7,340,000	7,173,920	8,686,452	8,397,579	32,167,440	31,356,362	2·52
GREAT BRITAIN	61,680,326	61,003,433	55,297,660	53,652,422	53,605,699	52,347,502	60,783,939	58,960,204	231,367,624	225,963,561	2·34

(4) Committees of Investigation.

(a) Action was taken during the year on two complaints investigated in 1933, to which reference was made in last year's Report, as follows :—

The investigation by the Durham Committee into the complaint lodged by the workmen employed at the Hedley Hope Colliery resulted in two recommendations being made, the first of which was dealt with in last year's Report. The second was to the effect that the Durham Scheme should be amended to provide for greater elasticity with regard to the revision of output standard tonnages. In order to meet this recommendation the provisions of Clause 44 of the Durham Scheme were amended.

The Report of the Midland (Amalgamated) District Committee of Investigation into the complaint of Low Temperature Carbonisation, Limited, and The Low Temperature Distillers' Association was accepted by the Department and the District Executive Board resolved under the powers vested in it by the provisions of the Scheme to create a separate class of standard tonnage and quota in respect of coal supplied to low temperature coking plants. After consultation with the complainants the Department accepted the resolution of the Board, as complying generally with the Report of the Committee of Investigation.

(b) During the year three complaints were lodged with the Committees of Investigation, one of which was withdrawn by the complainants before investigation. Action on the two others is summarised below :—

The Choppington Collieries, Limited, supported by several other collieries in the District, complained to the Northumberland District Committee of Investigation that the provisions of the District Scheme governing the representation on the Executive Board of the coalowners in the District and the provisions relating to voting on a tonnage basis were unfair and required amendment. The Committee made a recommendation designed to rectify the complaint, and the necessary amendment of the Scheme is under discussion with the Executive Board.

A complaint was lodged with the Midland (Amalgamated) District Committee of Investigation on behalf of the workmen employed at the New Hucknall Colliery to the effect that the standard tonnage allotted to the coal mine was unfair, inequitable and contrary to the public interest. The Committee decided that they were unable to recommend an increased standard tonnage.

4. Wages and Profits

There were no general variations in wages during 1934. In Warwickshire and North Staffordshire wages were paid at a higher percentage than the minimum, in Warwickshire from August to

December and in North Staffordshire during April and May. With these two exceptions, wages during 1934 remained at the minima laid down in the District Wages Agreements.

New district agreements involving increases of wages were signed in Scotland, South Wales and North Staffordshire, whilst in Warwickshire and Cumberland modifications of the existing agreements also resulted in wage increases. For the first time a District Agreement was signed in Kent, an interesting feature of which is a new principle for the division of the surplus proceeds, the share of profits being calculated on the amount of wages paid. A new Agreement for Lancashire and Cheshire was also signed during the year. The main provisions of these Agreements will be found in Table 19 of Appendix A.

Although wages were everywhere (except in the two cases mentioned above) paid at the minimum throughout the year, in several districts the wages ascertainments at times yielded percentages above the minimum; but the arrangements for the recoupment of deficiencies carried forward from previous periods did not permit an increase in the percentage payable.

The following table shows that this occurred in 32 cases during 1934 as compared with only 19 in 1933.

	Yorkshire.	Nottinghamshire.	North Derbyshire.	Leicestershire.	Cannock Chase.	Warwickshire.	North Staffordshire.	South Staffordshire.
(*a*) Minimum Percentage	32·00	38·00	38·00	32·00	40·00	43·00	35·00	38·00
(*b*) Ascertainment Percentage								
February ..	36·19	38·86	—	—	43·05	—	—	—
March	37·88	45·78	40·66	—	45·61	—	35·48	—
April	34·19	47·05	43·54	—	44·62	—	37·45	—
May	—	48·22	41·35	—	44·15	—	37·30	45·58
June	—	43·02	—	—	—	43·56	—	45·58
July	—	—	—	—	—	—	—	45·58
August ..	—	—	—	32·61	—	44·55	—	—
September ..	—	—	—	33·10	—	45·90	—	—
October ..	—	—	—	33·08	—	45·54	—	—
November ..	—	—	—	33·18	—	45·06	—	—
December ..	—	—	—	33·45	—	46·23	—	—

The usual financial statistics for the year are shown on page 30. Average earnings per shift showed a slight increase on 1933, the figure for the country as a whole being 9*s*. $1\frac{3}{4}$*d*. as compared with 9*s*. $1\frac{1}{2}$*d*. for 1933. Individual districts showed changes varying from an increase of $1\frac{1}{2}$*d*. per shift in South Wales to a reduction of $\frac{3}{4}$*d*. per shift in Lancashire, Cheshire and North Staffordshire.

For the third year in succession an increase of nearly ½ cwt. in the output of coal per man-shift was recorded. The greatest increase was 1·09 cwts. in the South Midlands, but Durham showed an increase of only ·03 cwt., whilst the small districts showed a drop of 0·1 cwt. Employment was more regular in all districts, the average number of shifts per man being 11 more than in 1933. All districts showed an increase in the number of shifts worked per man, ranging from 15 in Lancashire, Cheshire and North Staffordshire to 6 in North Derbyshire and Nottinghamshire. Annual cash earnings as a result were more than £5 higher than in 1933, the increase in the various districts varying from £6 1*s.* 5*d.* in Lancashire, Cheshire and North Staffordshire to £3 11*s.* 9*d.* in North Derbyshire and Nottinghamshire.

Over the whole country gross proceeds fell by an average of 2*d.* per ton from the 1933 figure, and a decrease in the figures for gross proceeds per ton was recorded in every district except Scotland, which showed an increase of 2¾*d.* The greatest decreases were recorded in South Wales, North Derbyshire and Nottinghamshire, the South Midlands, Lancashire, Cheshire and North Staffordshire. Costs other than wages also fell by an average of 2*d.* over the whole country, the maximum reduction being a drop of 3¼*d.* per ton in South Wales. The average net proceeds for the country as a whole remained at the same figure as in 1933, though in Scotland they showed an increase of 4½*d.* per ton, whilst there was a decrease in all other districts, except Northumberland and Durham.

The increased output per shift resulted in a fall of 2¼*d.* per ton in wages costs throughout the country though in the small districts no decrease under this heading was recorded. The smallest decrease was ¼*d.* per ton in Durham and the largest 5¾*d.* per ton in the South Midlands and 5¼*d.* per ton in Lancashire, Cheshire and North Staffordshire. As a result, the average profit or loss figure represented an improvement on the 1933 figure in all cases except the small districts and an average improvement of 2¼*d.* per ton for the whole country.

Three districts, Northumberland, Durham and South Wales, recorded a loss on the year; but in all three cases the figures represented an improvement on 1933, in South Wales ¼*d.*, in Durham 1½*d.*, and in Northumberlamd 1¾*d.* per ton. The highest increases over profits recorded last year were found in Scotland, the South Midlands and Lancashire, Cheshire and North Staffordshire.

It will be seen from the figures on page 30, showing wages costs expressed as a percentage of net profits, that in every district the wages share of the net proceeds was, in fact, greater than the share provided for under the district wages agreements as summarised in the second column of Table 19 of Appendix A. This was, of course, due to the provisions in the agreements regarding the payment of minimum wage rates.

Average Proceeds, Earnings and Profit (or Loss) in the Coal Mining Industry during 1934.

District.	Per ton disposable commercially.					Percentage of Wages Costs to Net Proceeds.	Per Manshift Worked.		Per Person employed per Annum.	
	Gross Proceeds.	Costs other than Wages.	Net Proceeds.	Wages Costs.	Profit (+) or Loss (−).		Output of Saleable Coal.	Average Cash Earnings (all classes of Workpeople).*	Average Number of Manshifts worked.	Average Cash Earnings.*
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	%	cwts.	*s. d.*		£ *s. d.*
Scotland	11 $9\frac{3}{4}$	3 $9\frac{1}{2}$	8 $0\frac{1}{4}$	7 $6\frac{1}{2}$	+ 0 $5\frac{3}{4}$	94·0	25·22	8 $9\frac{1}{4}$	304	133 2 8
Northumberland ..	11 $1\frac{1}{2}$	4 $3\frac{1}{2}$	6 10	6 11	− 0 1	101·2	23·74	7 $9\frac{1}{2}$	282	109 14 7
Durham	12 $3\frac{1}{4}$	4 $9\frac{1}{2}$	7 $5\frac{3}{4}$	7 $8\frac{3}{4}$	− 0 3	103·3	22·12	8 $0\frac{1}{2}$	261	104 19 2
South Wales and Monmouthshire†	15 $1\frac{3}{4}$	5 $5\frac{1}{4}$	9 $8\frac{1}{2}$	9 $9\frac{3}{4}$	− 0 $1\frac{1}{2}$	101·1	19·83	9 $0\frac{1}{2}$	264	119 7 0
Yorkshire	13 $3\frac{1}{2}$	4 0	9 $3\frac{1}{2}$	8 $4\frac{3}{4}$	+ 0 $10\frac{3}{4}$	90·4	26·08	10 2	225	114 9 7
North Derbyshire & Nottinghamshire	13 $1\frac{1}{4}$	3 10	9 $3\frac{1}{4}$	8 3	+ 1 $0\frac{1}{4}$	89·0	27·38	10 $5\frac{1}{4}$	216	112 16 3
South Derbyshire, Leicestershire, Cannock Chase & Warwickshire ..	14 11	4 $1\frac{1}{2}$	10 $9\frac{1}{2}$	9 $5\frac{3}{4}$	+ 1 $3\frac{3}{4}$	87·8	22·13	9 8	228	110 8 7
Lancashire, Cheshire and North Staffordshire ..	15 $9\frac{3}{4}$	5 $0\frac{1}{2}$	10 $9\frac{1}{4}$	10 4	+ 0 $5\frac{1}{4}$	95·9	19·62	9 $2\frac{1}{2}$	249	114 11 10
Cumberland, North Wales, South Staffordshire, Shropshire, Bristol, Forest of Dean, Somersetshire and Kent	14 $5\frac{1}{2}$	4 $7\frac{3}{4}$	9 $9\frac{3}{4}$	9 $9\frac{3}{4}$	+ 0 0	100·0	19·32	8 8	278	120 10 4
Average for all Districts	13 $5\frac{1}{2}$	4 $5\frac{1}{4}$	9 $0\frac{1}{4}$	8 $7\frac{1}{4}$	+ 0 5	95·4	22·94	9 $1\frac{3}{4}$	253	115 11 6
Average for all Districts (1933)	*13 $7\frac{1}{2}$*	*4 $7\frac{1}{4}$*	*9 $0\frac{1}{4}$*	*8 $9\frac{1}{2}$*	*+ 0 $2\frac{3}{4}$*	*97·5*	*22·47*	*9 $1\frac{1}{2}$*	*242*	*110 5 10*

* Tables 21 and 22 of Appendix A show the average value of allowances in kind which are excluded above.

† The particulars for this district relate to February, 1934, to January, 1935 (inclusive).

NOTE.—Costs other than wages relate only to expenditure incurred on revenue account. The profit (or loss) shown above, therefore, does not take account of such capital expenditure as loan interest and amortisation charges. For further particulars *see* Table 23 of Appendix A.

5. Hours of Labour

Special Inquiries into the Working of Overtime in Lancashire and Scotland.—In November, 1933, an official complaint was made by the Mineworkers' Federation of Great Britain that overtime was being extensively and habitually worked in coal mines in contravention of the provisions of Section I of the Coal Mines Regulation Act, 1908. The Secretary for Mines decided to carry out a special inquiry in one district, and the Mineworkers' Federation selected Lancashire for this purpose, as being a coalfield in which machine mining is largely practised and also one regarding which special complaint had been made. The results of this inquiry were summarised in a Report (Cmd. 4226) presented to Parliament and published by H.M. Stationery Office in June, 1934. The investigation covered mines employing 97 per cent. of the persons employed below-ground in Lancashire and the period examined was the six weeks ended 17th February, 1934. As a result, it was found that during this period 43,696 hours overtime had been worked, whilst 1,415,734 ordinary shifts had been worked under-ground. The percentage ratio of overtime to the total time worked was therefore 0·41, the average duration of each case of overtime being 1 hour 41 minutes. The considered view of the special inspectors who carried out this inquiry was that the greater part of the overtime thereby disclosed may reasonably be regarded as necessary for the proper and efficient working of the mines, and the results of the inquiry indicated that, at any rate so far as Lancashire is concerned, apprehensions that the law in regard to overtime is being deliberately and systematically violated are without foundation.

After the publication of this Report further representations on the subject were received from the Mineworkers' Federation of Great Britain and from Members of Parliament, and it was felt that the information collected during the Lancashire inquiry might well be supplemented by a similar investigation in another district where machine mining was widely practised. The Mineworkers' Federation selected Scotland for this purpose, with special reference to Lanarkshire, and an inquiry into overtime in Scotland during the six weeks terminating 24th November, 1934, was accordingly undertaken.

6. Legislation

Mining Industry (*Welfare Fund*) *Act*, 1934.—The main provisions of this Act are summarised in the section of this Report which deals with the Miners' Welfare Fund (see below).

Mines (*Working Facilities*) *Act*, 1934.—See " Other Mining and Quarrying " (page 38).

7. Miners' Welfare Fund

The membership of the Miners' Welfare Committee which is responsible for allocating this Fund is given in Appendix C. It

underwent two changes in 1934; Sir Frederick Sykes was appointed Chairman upon the resignation of Lord Noel-Buxton, and Mr. W. Lawther was appointed a member representing the Mineworkers' Federation of Great Britain upon the resignation of the late Mr. Peter Lee.

A full account of the work of the Committee in 1934 has been published separately.* The receipts of the Fund in 1934 were as follows :—

	£
Output welfare levy	416,767
Royalties welfare levy	171,000
Interest	73,215
Total ...	660,982

The receipts from the output levy, which had generally amounted to about a million pounds a year except in 1932 when there was a contraction to £843,680, fell to £416,767 in consequence chiefly of the operation of the Mining Industry (Welfare Fund) Act, 1934, which reduced the amount of the levy from 1*d.* per ton to ½*d.* per ton.

This Act also extended the period of the levy for 16 years beyond the current five-year period, *i.e.*, up to and including the levy on the 1951 output, and required the following appropriations to be made from the receipts annually commencing in 1934, before crediting four-fifths to the Districts Fund and one-fifth to the General Fund :—

(*a*) For providing pithead baths—such sum as will, together with the proceeds of the royalties welfare levy of the year, amount to £375,000.

(*b*) For safety and health research—£20,000.

The receipts from the royalties levy, applicable wholly for providing pithead baths, have, owing to the reduction of output, fallen from £204,000 in 1932 to £179,000 in 1933 and £171,000 in 1934. The interest on the Baths Fund balances being £20,673, the sum appropriated from the output levy receipts in 1934 was £182,676 in order to make up, with a sum of £651 previously credited, the Baths Fund total of £375,000.

After deducting this appropriation of £182,676 and the appropriation of £20,000 for research, the balance of the output levy receipts, namely £214,091, was credited four-fifths to the Districts Fund (£171,273) and one-fifth to the General Fund (£42,818). Including interest on the balances, the Districts Fund received altogether £210,096 and the General Fund £56,537 *plus* £20,000 for research.

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* Miners' Welfare Fund, Thirteenth Annual Report, 1934. H.M. Stationery Office, Price 1*s.* 6*d.* net.

Some doubt having existed in the past as to the scope of the expression " workers in or about coal mines " which is used in the Mining Industry Act, 1920, to describe those entitled to the benefits of the Welfare Fund, the Act of 1934 defined the expression as including " (*a*) persons who have ceased to be employed as such workers by reason of age or disability, (*b*) persons who, having ceased to be employed as aforesaid for any reason, have not subsequently changed their occupation, and (*c*) the dependants of such workers and of such persons as aforesaid."

The new Act also included provisions prohibiting the use of the Fund for the payment of pensions or other similar payments, and dealing with certain matters concerning the collection of the output levy.

District Funds.—The above-mentioned credit of £171,273 was divided amongst the District Funds of the 25 districts in proportion to the sums contributed in the districts, and the District Funds were also credited with their proper shares of the interest.

The passing of the new Act continuing the District Funds for a long period, though at a much reduced annual amount, was naturally regarded by the Miners' Welfare Committee as the occasion for a reconsideration of policy. Their proposals were still in the stage of development at the end of the year, but it may be mentioned that the Committee had decided to enter into discussions with the District Miners' Welfare Committees with the object of securing that carefully prepared plans will be made in advance for the utilisation of the money accruing to the District Funds over a period of years, that the proportion assigned to schemes for recreation and leisure occupation will be allocated in relation to urgency of need, and that haphazard development of recreation schemes will be avoided. The levy having changed from a temporary levy to one of long duration, the Committee considered it their duty to endeavour to arrange for continuous contact to be maintained with the local schemes with the object of ensuring their permanence and their progressive growth in welfare value.

The total receipts of the Districts Fund up to the end of 1934 amounted to £9,565,914 and the grants allocated amounted to £8,976,004, leaving an unallocated balance of £589,910. This balance was spread amongst the 25 districts, but 70 per cent. belonged to five of them, namely, Lancashire and Cheshire (£178,316), Durham (£74,989), Northumberland (£69,476), Lothians (£51,107) and South Staffordshire (£37,236).

The grants made in 1934 totalled £295,152, of which £162,600 (55 per cent.) was for recreation and leisure occupation, indoor and outdoor; the average annual sum granted for this purpose during the preceding 13 years of the Fund was nearly £370,000. The grants in 1934 were mainly for improving or adding to schemes already established and there were few heavy grants for starting new schemes. Allocations were made for health purposes amounting to

£88,818 (30 per cent. of the total), of which £73,106 was for convalescent homes and funds.

Pit welfare purposes received £20,868, of which sums amounting to £13,192 were allocated for additional pithead baths upon the recommendation of the District Committees concerned. Under the new Act no allocations may be made from a District Fund for pithead baths without the approval of the District Committee.

The other allocations were £6,763 for aged miners' houses, £6,103 for educational purposes and £10,000 for the administration expenses of the District Committees.

General Fund.—The total sum credited to the General Fund up to the end of 1934 amounted to £2,005,394, excluding £460,920 transferred to the Baths Fund; the sum credited in 1934 was £76,537 as stated above. Grants had been allocated up to a total of £1,990,569, leaving an unallocated balance of £14,825.

Apart from the sum transferred to the Baths Fund, the grants have been almost entirely either for educational purposes, which have received £1,048,523, or for research regarding problems affecting the safety and health of mine-workers, which has received £846,642.

In 1934, sums amounting to £60,234 were allocated for buildings and equipment for senior, advanced and university courses of mining instruction, bringing the total of the grants under this heading up to £773,420, and there only remains unappropriated £16,580 out of the sum of £790,000 fixed by the Miners' Welfare Committee to complete the contributions of the Welfare Fund towards this object. The chief grant in 1934 was one of £42,000 for extending and improving the premises and equipment of the Treforest School of Mines, Glamorgan, so that it may in future be used for the Mining Department of the University of Wales as well as for a county advanced centre of mining instruction.

A sum of £75,000 was allocated in 1934 for an endowment of which the income is to be applied to providing scholarships for students taking part-time day courses of advanced mining instruction at approved institutions. The details of the scheme will be published in due course. Another endowment fund was established by an allocation of £25,000 in order to provide a few exhibitions for unsuccessful applicants for Miners' Welfare National Scholarships who may be reported by the Selection Committee to be very meritorious. Ever since the first awards of National Scholarships in 1927 it has been the practice of the Miners' Welfare Committee to make a number of special grants in this manner to the aggregate value of between £800 and £1,000 a year, and it appeared desirable to make permanent provision for supplementing the Scholarship Scheme in this respect. An allocation of £995 was made in 1934 to provide 24 grants pending the operation of the new scheme. Two small grants amounting to £672 for safety instruction and non-vocational lectures brought the total for educational purposes in 1934 to £161,901.

The grant for research in 1934 amounted to £44,210, including the £20,000 appropriated under the Act of 1934, The estimated expenditure of the Safety in Mines Research Board for 1934/5 was £61,593, the balance being made up by £12,416 from the Endowment Fund, £1,750 from the Treasury and £3,217 from savings on previous grants.

Baths Fund.—As mentioned above, the sum to be credited to the Baths Fund annually was stabilised at £375,000 by the Act of 1934. The total credits up to the end of 1934 amounted to £2,939,222, the amount allocated was £2,975,341, and the total payments against the allocations amounted to £2,391,565.

Twenty-seven new baths installations were opened in 1934 accommodating 35,702 men and 56 women. At the end of the year the Miners' Welfare Committee had completed 154 installations, were building 21, and had planned and allocated the money for 18, making a total of 193 installations, the accommodation of which was sufficient for 254,918 men and 462 women. In addition there were 32 installations in use (accommodating 24,643 men) which had been provided wholly by the colliery owners or by the colliery owners and the Welfare Fund jointly.

The Act of 1934 empowered the Miners' Welfare Committee to provide out of the annual sum credited to the Baths Fund such accommodation or facilities as they think can be conveniently and properly combined with pithead baths. Under this power they decided that, commencing with 1934, they would provide new baths installations with canteens at the cost of the Baths Fund where they were satisfied that a canteen is required and is likely to be used adequately. Under this decision allocations for canteens were made from the Baths Fund during 1934 for 16 new installations of a total amount of £15,446.

Financial Position.—The financial position of the Fund at 31st December, 1934, is shown in the following statement.

(1) *Receipts*

	Total Receipts.	Credited to		
		Districts Fund.	General Fund.	Baths Fund.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Output Levy 1920–34 ...	11,731,655 14 5	9,223,183 8 11	1,864,876 5 0	643,596 0 6*
Royalties Levy 1926–34 ...	1,554,000 0 0	—	—	1,554,000 0 0
Interest 1920–34 ...	1,224,873 18 2	342,730 1 1	140,517 11 5	741,626 5 8†
	14,510,529 12 7	9,565,913 10 0	2,005,393 16 5	2,939,222 6 2

* Includes £460,919 12*s.* transferred from General Fund.

† Includes £507,743 13*s.* 10*d.* transferred from Districts and General Funds by direction of the Miners' Welfare Committee.

(2) *Credits, Allocations and Payments*

Fund.	Credits.			Allocations.			Payments.		
	£	s.	d.	£	s.	d.	£	s.	d.
Districts ..	9,565,913	10	0	8,976,004	2	10	8,660,980	19	5
General ..	2,005,393	16	5	1,990,568	19	0	1,648,816	0	2
Baths ..	2,939,222	6	2	2,975,340	18	0	2,391,565	2	5
	14,510,529	12	7	13,941,913	19	10	12,701,362	2	0

Miners' Welfare National Scholarship Scheme

A full report of the work of this Scheme in 1934 has been published as part of the Annual Report on the Miners' Welfare Fund (see note (*) page 32).

The income from the Endowment Fund in 1934 amounted to about £8,000 and approximately 97 per cent. was disbursed in scholarships. The number of applicants in 1934 was 692, 82 per cent. being children of mine-workers, and 15 scholarships were awarded.

The total number of scholarships awarded during the eight years in which the scheme has been in operation is 106, of which 50 were for mine-workers and 56 for children of mine-workers. At the end of 1934, 38 scholarships were being maintained.

PART II

OTHER MINING AND QUARRYING INDUSTRIES IN 1934*

The minerals to which this section of the Report relates represent the raw materials of many branches of industry, some of which, e.g., the metal trades, though not so active in 1934 as in 1929, showed a substantial recovery from the depression of recent years; others, e.g., the building trades, were exceptionally active as compared with post-war and even pre-war standards, and the majority of which showed some improvement as compared with 1933. In consequence, the aggregate net selling value at mines and quarries of the output of these minerals rose from £17¾ million in 1933 to £20 million in 1934, or by 13½ per cent.; while the aggregate tonnage of mineral raised was about 17 per cent. higher.

The average number of persons employed at these mines and quarries declined steadily from 112,800 in 1929 to 86,700 in 1933 and rose to 93,500 in 1934. The improvement in 1934 was general though unequal.

The following table shows the total net selling value of the minerals raised and the approximate number of persons employed at mines and quarries in 1934 grouped roughly according to the use for which the mineral was intended :—

Group.	Total Net Selling Value of Output.	Percentage of Total Value.	Approximate Number of Persons Employed.
	£	%	
1. Iron Ore and Ironstone ..	2,242,000	11	8,000
2. Non-Ferrous ores	826,000	4	3,300
3. Minerals (other than metalliferous ores) used mainly in iron and steel-making and other smelting processes ..	1,378,000	7	7,400
4. Minerals used mainly for china, pottery and glass manufacture	1,028,000	5	4,100
5. Minerals used mainly for building, road-making, lime, cement, concrete, etc. ..	12,494,000	62	63,400
6. Other minerals..	2,114,000	11	7,300

* Except for metalliferous minerals and a few others of special importance this survey does not cover the produce of quarries which are less than 20 feet deep. The chief products of such quarries are clay, gravel and sand. Nor are sand and gravel raised from river beds and foreshores included. The output of mineral from these sources is fairly substantial.

Mines (Working Facilities) Act, 1934.—In the Report issued in 1932 by the Advisory Committee for the Metalliferous Mining and Quarrying Industry (referred to on page 33 of last year's Annual Report and on page 36 of the Annual Report for 1932) the Committee recommended that the provisions of Section 13 of the Mining Industry Act, 1926, should be extended to metalliferous minerals. This recommendation was carried into effect by the Mines (Working Facilities) Act, 1934.

This section widened very considerably the scope of the Mines (Working Facilities and Support) Act, 1923; but whereas the 1923 Act applied to all minerals, the 1926 Act applied only to coal. By the 1934 Act, the benefit of the more extensive provisions of Section 13 of the Mining Industry Act, 1926, is made available for metalliferous minerals also. It is now possible for rights to work or search for coal or for the minerals mentioned in the Schedule to the 1934 Act to be granted to any applicant, provided that the other conditions of the 1923 Act are fulfilled, namely, that it can be shown that the obstruction of the mineral landlord is "unreasonable" and that the working of the mineral is in the national interest.

The other main provision of Section 13 of the Mining Industry Act, 1926, embodied in the 1934 Act, is also of considerable potential utility to mining undertakings. The Court of the Railway and Canal Commission is empowered, under the conditions referred to at the end of the previous paragraph, to vary, in certain circumstances, the terms of existing mining leases.

Group I.—Iron Ore and Ironstone

Altogether, 10·59 million tons of iron ore and ironstone were got in 1934, an increase of 3·13 million tons (42 per cent.) as compared with 1933. The outputs of Jurassic ironstone and of North West Coast hematite iron ore were, respectively, 43 per cent. and 28 per cent. greater.

The average net selling value at mines and quarries of the Jurassic ironstone was 3*s*. 3*d*. per ton as compared with 3*s*. 2*d*. per ton in 1933; while that of North West Coast hematite iron ore declined from 14*s*. 1*d*. per ton in 1933 to 13*s*. 4*d*. per ton in 1934. The aggregate value of all iron ore and ironstone got in 1934 was £2,242,000 as compared with £1,608,000 in 1933.

The average number of persons employed at iron ore and ironstone mines and quarries rose from 6,675 in 1933 to 7,981 in 1934, and the number of days on which mineral was got from 248 to 270, on the average. Employment expanded continuously during 1933, and to the middle of 1934, but there was little change subsequently.

At mines on the North West Coast (Cumberland and Lancashire) 813,000 tons of *hematite* iron ore were produced in 1934 with an average metal content of 53 per cent., as compared with 633,000 tons in 1933. The production of ore at these mines in each quarter

of 1934 and the number of persons employed at the end of each quarter was as follows :—

	Iron Ore. *Tons.*	*Number of Persons employed.*
1st Quarter	191,000	1,929
2nd ,, ...	213,000	2,086
3rd ,, ...	207,000	2,055
4th ,, ...	202,000	1,976

The output of ore in 1934 was only 58½ per cent. of the tonnage got in 1929, the year of maximum output in the post-war period.

At the *Cleveland* mines 1,642,000 tons of ironstone were raised in 1934 with an average metal content of 29 per cent. as compared with 1,013,000 tons in 1933. Production and employment in each quarter varied as follows :—

	Ironstone. *Tons.*	*Number of Persons employed.*
1st Quarter	433,000	2,659
2nd ,, ...	405,000	2,584
3rd ,, ...	401,000	2,532
4th ,, ...	403,000	2,525

Supplies of ironstone from the Cleveland mines in 1934 amounted to 61½ per cent. of the tonnage got in 1929. To some extent they are now being replaced by Jurassic ironstone from the *Lower* and *Middle Lias* and the *Oolite* deposits of the Counties of Lincoln, Leicester, Northampton, Oxford and Rutland. The output of ironstone from these districts was 7,841,000 tons in 1934 with an average metal content of 28 per cent. as compared with 5,615,000 tons in 1933. Production and employment in each quarter were as follows :—

	Ironstone. *Tons.*	*Number of Persons employed.*
1st Quarter	1,880,000	2,712
2nd ,, ...	2,021,000	2,787
3rd ,, ...	2,045,000	2,819
4th ,, ...	1,895,000	2,811

The output of ironstone in 1934 at these mines and quarries was 92 per cent. of the tonnage got in 1929.

The total output of Jurassic ironstone including that from the Cleveland mines was 75 per cent. of the tonnage got in 1913; while the output of North West Coast hematite iron ore was 46 per cent. only.

The output of iron ore and ironstone from all other sources increased from 201,000 tons in 1933 to 291,000 tons in 1934. Nearly one-half of this was *Coal Measure Ironstone* with an average metal content of 32 per cent.

The quantity of iron ore imported and retained in 1934 was 4,359,000 tons as compared with 2,707,000 tons in 1933. In addition, 335,000 tons of cupreous iron pyrites which were imported would yield a further 251,000 tons of purple ore by roasting. Making allowance for the exportation of a small quantity of British ore, 15,194,000 tons of iron ore, approximately equal to $5\frac{1}{2}$ million tons of metal, were available for British furnaces. Of this 70 per cent. was produced at home, a proportion which is fairly comparable with the experience of normal years.

The Board of Trade Index of Industrial Production showed an increase of 25 per cent. in the activity of the iron and steel trades in 1934 as compared with 1933. The number of pig-iron furnaces in blast rose from 81 at the beginning to 96 at the end of 1934, the number of furnaces in existence in January being 332. The output of pig-iron increased from 4,136,000 tons in 1933 to 5,978,500 tons in 1934, and that of steel ingots and castings from 7,024,000 tons to 8,859,700 tons. The latter was exceeded in the post-war period only in the years 1920, 1927 and 1929, falling short of the 1929 figure by $\frac{3}{4}$ million tons, while the output of pig-iron in 1934 fell short of the output in 1929 by nearly $1\frac{2}{3}$ million tons. The level of prices of iron and steel products, according to the Board of Trade Index Number, showed a further increase rising from 105·8 in 1933 (as compared with 100·0 in 1913) to 109·6 in 1934.

Group 2.—Non-Ferrous Ores

(*a*) *Tin.*—The output in 1934 of dressed tin ore (i.e., black tin) in Cornwall and Devonshire was 3,224 tons with an average metal content of 62 per cent. as compared with 2,337 tons with 66 per cent. of metal in 1933. For the greater part this increase in output was shared nearly equally by the mines and quarries producing tin ore and by the alluvial workings (e.g., foreshores and tin-streams). The total net selling value at the mines, etc., of the output in 1934 was £404,900 and was equal to £125 11*s.* 6*d.* per ton as compared with £116 8*s.* 4*d.* per ton in 1933.

The output of tin ore at mines and quarries rose from $1,947\frac{1}{3}$ tons in 1933 to 2,352 tons in 1934 and accounted for nearly three-fourths of the total, the chief sources of supply, named in the order of importance, being the Geevor, South Crofty, East Pool and Agar, Porkellis (formerly Jantar, where productive operations commenced during the year) and Lady Gwendoline mines. During the latter half of the year development work was begun at five other mines, but except at the Wheal Breage and Great Work mines this was on a small scale.

The output of tin ore from foreshores and tin-streams increased from $318\frac{2}{3}$ tons in 1933 to $759\frac{1}{3}$ tons in 1934 owing chiefly to the resumption of operations at Gwythian Sands which had been

suspended for several years. In addition, 113 tons were obtained from old dumps situated at the surface of mines.

The number of persons employed at these mines, alluvial workings, etc., was 1,147 at the end of 1933 and rose at the end of successive quarters in 1934 to 1,405, 1,659, 1,827 and 1,927, including those who were engaged in the recovery of arsenic.

The smelting industry at home is largely dependent upon supplies of tin ore and concentrates which are chiefly imported from Bolivia, Nigeria and Chile. These amounted in 1934 to 38,500 tons.

A new Agreement for three years for the compulsory restriction of tin supplies became operative on 1st January, 1934, and in addition to the original signatories to the 1931 Agreement, namely, the Governments of Bolivia, the Netherlands East Indies, Malaya and Nigeria, those of Siam, the Belgian Congo, French Indo-China and Portugal are now participants in the scheme as well as the principal Cornish tin producers.

From one-third of the production in 1929 the export quota permissible to each of the original participants in the scheme was raised to 40 per cent. in January, 1934, when certain adjustments were effected equal to another 4 per cent. In April the quota was raised to 50 per cent. of the standard tonnages in order to accumulate a " buffer " stock the purpose of which was to secure greater stability in the price and supply of tin. In October, quotas current prior to April were reverted to.

There is a general consensus of opinion amongst the Cornish participants that the present scale of activity in the industry, and indeed its continued existence, depends very largely upon the continuance of the scheme.

The price of Standard Tin on the London Metal Exchange rose almost continuously since the middle of 1931 and in early April, 1934, was £244 per ton. It fell subsequently to £228 per ton in December, or to the same level as at the end of 1933. These are sterling values and considerably higher than their equivalent in gold. For the year 1934 the equivalent price of Standard Tin was 142 gold-pounds per ton and compares with 109 gold-pounds per ton in 1931.

Another mineral of some importance associated with the tin ore deposits is tungsten, the output of which in 1934 was 190 tons, with an average content of 69 per cent. Tungstic Oxide (WO_3), chiefly obtained from the Castle-an-Dinas mine (Cornwall). Considerable impetus was given to the production of this mineral at home and abroad during the war when the average rate of output at home rose to 320 tons per annum.

In 1934, 5,195 tons of tungsten ore valued at £423,965 c.i.f. were imported and retained; but the average value at mines of the British product was £122 17*s*. 5*d*. per ton. British tungsten ore

appears to command a ready market owing to its freedom from tin and other impurities.

(*b*) *Lead and Zinc.*—There was a further improvement in the output of lead ore though the latter half of the year was marked by some uncertainty partly due to difficulties associated with the duty on imported metal.* In spite of this, however, the output of dressed lead ore in 1934 was 68,122 tons, with an average metal content of 79 per cent., and the highest since 1880. The net selling value of this at the mines was £396,500 as compared with £303,100, the value of 49,056 tons got in 1933.

About three-fifths of the dressed lead ore produced in 1934 was obtained from the Mill Close mine (Derbyshire) and it was followed in order of importance by the Halkyn mine (Flintshire), Queensberry mine (Dumfries-shire), Nentsbury mine (Cumberland), St. Peters mine (Northumberland) and Greenside mine (Westmorland). Small quantities were also obtained at six other mines, the majority of which are primarily engaged in getting fluorspar, barytes and calcspar.

Operations were curtailed towards the end of the year at the Nentsbury mine and were abandoned at two mines including the Queensberry mine.

During recent years a considerable proportion of the output of British lead ore has been exported. From 60 per cent. (24,465 tons) in 1932 it rose to 70 per cent. (34,170 tons) in 1933, but declined to 66 per cent. (45,160 tons) in 1934. In this connexion it may be added that a new smelting plant erected at the Mill Close mine came into operation in November, 1934, and it is anticipated that it will be capable of dealing with the whole of the concentrates produced at this important mine where the development of new ore bodies continues to show promise.

In addition to the mining operations which were carried on, the Main Cross cut South, or deep gravity tunnel, in the Halkyn lead and zinc mining area in North Wales was completed to a distance of 18,657 feet from Pen-y-Bryn Shaft at the end of 1934 and now intersects eight ore lodes. The approximate point reached was about a mile south of Olwyn Goch Shaft (near Hendre).

Where the tunnel intersects Powell's Lode an installation was completed in 1934 capable of pumping 12,000 gallons of water per minute from 120 feet below the tunnel level. Preparations for the installation of hoisting equipment were in progress at Olwyn Goch Shaft.

The extension of this (the old Milwr) tunnel was commenced in 1929 after an interval of ten years during which successful efforts

* At the end of the year the question of supplies and prices of lead and zinc, and the provisions of the Ottawa Agreements in regard to them, was referred to the Import Duties Advisory Committee by the President of the Board of Trade.

were made to amalgamate the interests of nine mining companies with reserves estimated at 1 million tons of crude ore. At the end of 1934 the undertaking gave employment to over 500 men.

Zinc ore is almost invariably associated in the same veins as lead ore and owing to unfavourable market conditions in 1932 and 1933 the recovery of the former was negligible. With some improvement in conditions in 1934 the output of dressed zinc ore rose to 988 tons with an average metal content of 45 per cent. and a net selling value at the mines of £900. This was chiefly the produce of the Halkyn and Queensberry lead mines, the last-named of which has now been abandoned.

The average number of persons employed at lead and zinc mines in 1934 was 1,404 and compares with 1,031 in 1933. This includes persons employed on development work.

During the first half of the year the price of Soft (Foreign) Lead on the London Metal Exchange varied from £10 17*s.* 6*d.* to £11 15*s.* per ton and declined to £10 7*s.* 6*d.* per ton at the end of 1934 as compared with £11 5*s.* per ton at the end of 1933.

The price of Foreign Spelter varied from £14 to £15 per ton until the month of June but subsequently declined to £11 15*s.* per ton at the end of December as compared with £14 17*s.* 6*d.* per ton at the end of 1933.

Group 3.—Minerals (other than Metalliferous Ores) used mainly in Iron and Steel Making and other Smelting Processes

Conditions at the mines and quarries at which these minerals are got are chiefly dependent upon the activity of the iron and steel trades which has increased by more than 50 per cent. since 1932. In the non-ferrous metal trades an improvement of nearly 50 per cent. occurred between 1933 and 1934. The output of minerals covered by this Group in 1934 increased by 27 per cent. as compared with 1933 and by 44 per cent. since 1932.

The aggregate net selling value of these minerals at mines and quarries in 1934 was £1,378,000 as compared with £1,115,000 in 1933. On the whole, there was little change in the average values of these minerals.

The output of silica stone, silica sand and ganister increased by 19 per cent. as compared with 1933 to 532,000 tons; fireclay 20 per cent. to 2,016,000 tons; fluorspar (averaging 83 per cent. $Ca F_2$) 22 per cent. to 34,000 tons; moulding and pig-bed sand 25 per cent. to 714,000 tons; dolomite used as a refractory material 30 per cent. to 488,000 tons; and limestone and dolomite for blast-furnace use

37 per cent. to 2,072,000 tons. Except for the latter and fireclay, the output of these minerals in 1934 was greater than in 1930. In this connexion it may be added that considerable economy has been effected in the use of limestone as a flux in blast-furnaces, the quantity having declined from 7·38 to 5·82 cwts. per ton of pig-iron made between 1930 and 1933.

The average number of persons employed at these mines and quarries was 7,400 in 1934 and 6,300 in 1933.

Exports of fluorspar in 1934 amounted to 4,528 tons, and of fireclay to 25,630 tons. In 1933 the corresponding figures were 2,122 tons and 24,212 tons, respectively.

Group 4.—Minerals used mainly in China, Pottery and Glass Manufacture

The output in 1934 of the minerals covered by this Group rose by 16 per cent. as compared with 1933 and by 33 per cent. since 1932 indicating a considerable improvement in the activity of the various industries upon which these mines and quarries are dependent.

The aggregate net selling value in 1934 at the mines and quarries of these minerals was £1,028,000 and compares with £855,000 in 1933. The average value of limestone for use in glass-making and of chert for use in the china and pottery trades has declined since 1933, the latter by 1*s.* 10*d.* per ton. There was no change in the average value of sand for use in glass-making, while that of other minerals rose: potters' clay (including ball clay) by 9*d.* per ton, china clay 10*d.* per ton, and china stone by 2*s.* 4*d.* per ton.

The output of chert for use in the china and pottery trades and of potters' clay (including ball clay) increased by 4 per cent. as compared with 1933 to 4,200 tons and 152,600 tons, respectively; china clay by 16 per cent. to 690,100 tons; sand and limestone used in glass-making by 20 per cent. to 206,900 tons; and china stone by 43 per cent. to 48,000 tons, notwithstanding a substantial increase in value. The outputs of glass-making material and chert in 1934 are the highest since these particulars were first recorded.

On the average 4,100 persons were employed in 1934 at the mines and quarries at which these minerals were produced as compared with 3,500 in 1933.

China clay is used extensively in the pottery and porcelain industries and considerable quantities are also used in the paper making industry and in lesser quantities in several other industries both at home and abroad. But in common with many other commodities exports of china clay have suffered from the restrictions

imposed in Foreign markets and from 414,500 tons exported in 1933 the quantity fell to 402,700 tons in 1934.

In addition, 7,400 tons of felspar (including china stone) were exported in 1934, and 50,100 tons of ball clay, the corresponding figures in 1933 being 8,700 tons and 54,200 tons, respectively.

Group 5.—Minerals used mainly for Building, Road-making, Lime, Cement, Concrete, etc.

There was a further marked improvement in the building trades, conditions in which in 1934 were exceptionally active, but in public works contracting, conditions, as in 1933, were much less favourable. In consequence, the aggregate output of minerals at the mines and quarries covered by this Group amounted to the record figure of 67 million tons. This was 8 million tons (14 per cent.) greater than in 1933 and 12½ million tons (23 per cent.) greater than in 1930.

The aggregate net selling value of these minerals at the mines and quarries rose from £11,469,000 in 1933 to £12,494,000 in 1934, or by 9 per cent. Of those minerals forming the largest proportion of the total, clay, shale, etc., stone for road-making and ballasting and limestone used for lime and cement manufacture show slight reductions in the average value.

The classification of these minerals according to use is by no means precise or complete, but so far as particulars are available the output of the chief classes includes :

	Quantity. Tons.	*Net Selling Value.* £
(*a*) Building stone, slate, clay, sand* and other minerals used chiefly for brick, tile, etc., making ..	33,189,000	5,729,000
(*b*) Mineral used for road-making and ballasting (including kerbs, setts, flagstones, etc.)	19,412,000	4,885,000
(*c*) Minerals used for making lime, cement, plaster and for cementing	14,125,000	1,881,000

The increase in output as compared with 1933 under each of these classes was, respectively, 4,945,000 tons (18 per cent.), 1,357,000 tons (8 per cent.), and 1,911,000 tons (16 per cent.). Further particulars of the quantity and average net selling value of these minerals will be found in Tables 1 and 37 of Appendix A.

Some approximate indication of the increased activity since the pre-war period of the building and contracting trades upon which the mines and quarries producing these minerals were mainly

* Gravel and sand was previously included with minerals in class (*c*).

dependent, as well as the effect of changes in constructional methods employed in those trades, is afforded by the following comparison :

Mineral.	Output in		Increase in 1934.	
	1913.	1934.	Quantity.	Percentage of 1913.
	Thousand tons.			%
Igneous rocks (including granite, basalt, whinstone, etc.)	6,638	8,869	2,231	34
Limestone (including calcspar) ..	12,158	14,694	2,536	21
Sandstone (including ganister, silica stone and (in 1934) silica sand) ..	3,949	3,799	150*	4*
Total of the above	22,745	27,362	4,617	20
Chalk	4,858	7,682	2,824	58
Clay, shale, etc. (including mica clay)	10,017	21,928	11,911	119
Gravel and sand (including moulding and pig-bed sand and (in 1913) silica sand)	2,307	14,055	11,748	509
Total of the above	17,182	43,665	26,483	154
Grand Total	39,927	71,027	31,100	78

* Reduction.

The inclusion above of certain minerals which belong to other Groups is unavoidable in comparison with the pre-war period, but the effect is negligible. The greater part of these minerals are the produce of quarries more than 20 feet deep. Prior to the war 57 per cent. of the total output of these minerals was rock and stone, while in 1934 the proportion was only 39 per cent.

At the mines and quarries at which the minerals covered by this Group were got 63,400 persons, on the average, were employed in 1934, as compared with 61,100 persons in 1933.

For particulars of the imports and exports of these minerals reference should be made to Table 38 of Appendix A.

Group 6.—Other Minerals

The aggregate output of the minerals covered by this Group has grown steadily since 1931 and the output of barytes and witherite in this country in 1934 was the highest recorded since 1873, while the output of salt was the highest since 1880. The total net selling value of these minerals in 1934 at mines and quarries was £2,114,000 as compared with £2,087,000 in 1933.

The average number of persons employed at these mines and quarries rose from 7,100 in 1933 to 7,300 in 1934, the first upward change since 1929.

Many of the minerals dealt with find an outlet in the chemical and allied industries. Of the more important of these reference may be made to the following :

Salt.—Five-sixths of the output of salt was the produce of Cheshire, chiefly as brine pumped from salt deposits, and the remainder chiefly from brine deposits in the Counties of Lancaster, Stafford, Durham, Worcester and York and in the Isle of Man named in the order of their importance.

The production of salt and salt brine in 1933 and 1934 was as follows :—

	1934. *Tons.*	1933. *Tons.*
Rock salt mined	17,000	20,000
Salt evaporated from brine ..	794,000	777,000
Salt content of brine pumped to alkali works	1,695,000	1,556,000
Total	2,506,000	2,353,000
Total Net Selling Value ..	£1,070,000	£1,102,000

The average value of salt brine for use at alkali works in 1934 showed no change as compared with 1933, while that of rock salt rose from £1 2*s.* 10*d.* to £1 5*s.* 5*d.* per ton. The average value of white salt declined from £1 6*s.* 3*d.* to £1 4*s.* 9*d.* per ton.

The Dominions furnish an extensive market for the latter. The total exports of salt to these and other countries amounted to 266,500 tons valued at £695,600 f.o.b. in 1934, as compared with 258,500 tons valued at £711,700 f.o.b. in 1933.

Oil Shale.—Reference to this industry will be found on page 98.

Barytes and Witherite.—Altogether 74,000 tons of these minerals were produced in 1934 with an aggregate net selling value at mines and quarries of £129,500 compared with 66,600 tons in 1933 valued at £109,900. The output in each year was as follows :—

	1934. *Tons.*	1933. *Tons.*
Barytes and Witherite :		
Not ground	48,100	45,100
Ground and bleached	5,600	7,600
Ground and unbleached ..	20,300	13,900

The average value of barytes and witherite was higher in 1934 than in 1933, that of mineral not ground rising by 3*s.* 4*d.* to £1 6*s.* 5*d.* per ton, the ground mineral bleached by 1*s.* 1*d.* to £3 12*s.* 6*d.* per ton and ground mineral unbleached by 1*s.* to £2 5*s.* 1*d.* per ton.

From 1,000 to 20,000 tons of *barytes* were obtained from each of the following Counties named in order of importance as a source of

supply, namely, Ayr, Devon, Salop, Bute, Derby and York, the aggregate output of the first three named being 49,500 tons, or 78 per cent. of the whole. Small quantities were also obtained from Westmorland and Montgomery. Supplies of *Witherite* in 1934 were obtained from the Settlingstones mine (Northumberland) and the South Moor "Morrison North" and Holmside "Busty" mines (Durham).

Important supplies of *barytes* are obtained from abroad chiefly from Germany and the Netherlands, the quantities imported in 1934 including 20,800 tons of unground and 14,900 tons of ground barytes, the corresponding quantities in 1933 being 18,400 tons and 14,750 tons, respectively. The total available supply for consumption at home in 1934, allowing for a small tonnage of British barytes exported, was 96,900 tons as compared with 93,100 tons in 1933. The proportion of the home market held by British products was 50 to 54 per cent. during the years 1927-31 and rose to 67 per cent. in 1932, 64 per cent. in 1933 and 63 per cent. in 1934.

PART III

PROCEEDINGS UNDER PART I OF THE MINES (WORKING FACILITIES AND SUPPORT) ACT, 1923, AND PART II OF THE MINING INDUSTRY ACT, 1926.

The number of applications referred during the year to the Railway and Canal Commission was three. One of these (referred to below) was heard and determined, and in the remaining two cases pleadings were not completed at the end of the year. One application which was referred to the Commission in 1933 was decided during 1934. There were no proceedings before the Commission in Scotland.

(i) The British Portland Cement Manufacturers, Limited, desired to obtain the grant of an ancillary right to make a further diversion of a public bridleway at Hope Valley, Derbyshire. In 1928 the applicants diverted the bridleway under the authority of an order granted by the County Quarter Sessions. They now proposed to extend their cement making plant, and an encroachment upon the existing way would be necessary for this purpose. No objections were raised, and the Court granted the application.

The following is the application referred to the Court in 1933 and heard in 1934.

(ii) The Consett Iron Company, Limited, applied for the grant of a right to use and occupy for the purposes of a mineral railway several strips of land comprising about 27 acres in the Parishes of Ryton Chopwell, and Winlaton, Durham, freed from the tonnage rates and fixed annual rentals payable under the terms of two existing leases granted to them by the Trustees of the Clavering and Townley Estates. The applicants contended that the onerous nature of these rents which at the time amounted to about £6,000 per annum impeded the working of the coal in the most efficient and economical manner, and that they had been unable to obtain a modification in the terms of the two leases, except on terms which were considered unreasonable. The application was opposed by the respondents mainly on the grounds that the Commission had no jurisdiction to grant the relief sought. An interesting feature in the case was that the Court committed itself for the first time to a specific expression of opinion as to its powers under Section 13 (2) of the 1926 Act. The Court granted the rights applied for, and ordered that the rental to be paid should be a fixed rent of £10 per acre per annum. An appeal against the order was lodged by the Respondents.*

* This appeal was heard in April, 1935, and was successful.

PART IV

HEALTH AND SAFETY.

This subject in its technical and statistical aspects is dealt with in detail in the Annual Reports of the Inspectors of Mines and the Annual Report of the Safety in Mines Research Board which includes a Report on the work of the Health Advisory Committee. It is, therefore, only necessary to deal here with matters of general administration and the work of the Official Testing Stations.

1.—Public Inquiries and Committees

In view of the prevalence of silicosis in the anthracite district of West Wales, and with the object of discussing and emphasizing the importance of preventive measures, a general Conference was held by the Secretary for Mines on 16th June at Swansea. Over 500 persons, representing all sections of the industry, were present. The speakers included Dr. S. W. Fisher, M.D., B.Ch. (Medical Inspector of Mines), Mr. T. Ashley (Divisional Inspector of Mines), Mr. P. S. Hay, O.B.E. (Inspector of Mines), Mr. John James, J.P. (South Wales Miners' Federation), the late Mr. D. Farr Davies, Sir Wm. Jenkins, M.P., and Mr. D. R. Grenfell, M.P.

(a) *Inquiries into Mining Accidents*

The Report of one public inquiry under Section 83 of the Coal Mines Act, 1911, and one special Report under Section 82 of the Act, were published during the year, viz. :—

(i) By H.M. Chief Inspector of Mines into the Explosion at Grassmoor Colliery, Derbyshire, on 19th November, 1933, whereby 14 persons lost their lives. (Cmd. 4550.)

(ii) By Mr. E. H. Frazer, H.M. Divisional Inspector for the Scotland Division, into the explosion at Polmaise Nos. 3 and 4 Colliery, Stirlingshire, on 3rd February, 1934, whereby three persons lost their lives. (Cmd. 4617.)

H.M. Chief Inspector was appointed during 1934 to hold a formal investigation into the explosion which occurred at Gresford Colliery, Denbighshire, on 22nd September, 1934, whereby 265 persons lost their lives. This inquiry began at Wrexham on 25th October, and that part of it which related to the conditions prior to the explosion was completed on 14th December, the hearing having occupied 28 days. During that time, 185 witnesses were examined and 41,547 questions were asked. The inquiry was then adjourned

pending the reopening of the mine and the availability of further evidence relating to the actual cause of the disaster.

During 1934, also, Mr. J. R. Felton, O.B.E., H.M. Divisional Inspector for the North Midland Division, was instructed to make a special report on the explosions which occurred at Bilsthorpe Colliery, Nottinghamshire, on 26th July, 1934, whereby nine persons lost their lives. This Report* was completed during the year and was published in January, 1935.

(b) *Other Inquiries*

Precautions against Overwinding.—The Departmental Committee on this subject appointed in 1933, under the chairmanship of Mr. F. H. Wynne, C.B.E., B.Sc., H.M. Deputy Chief Inspector of Mines, pursued its inquiries throughout the year. Seven meetings were held and evidence was taken from ten witnesses representing national and local associations and H.M. Inspectors of Mines. In addition, the Committee visited a number of mines for the purpose of examining types of winding controllers. At the close of the year the Committee was engaged on the preparation of its Report, which has since been published.†

2.—Regulations and Orders

(a) *Of General Application*

The Explosives in Coal Mines Order of 1st January, 1934, consolidating nine earlier Orders regulating the supply, use and storage of explosives at mines, was dealt with in last year's Report.

On 31st January, 1934, an amended Explosives in Coal Mines (Cardox) Order was made, regulating the charging, priming and use of cardox carbon dioxide cartridges at mines. This Order made no change in the conditions of use but amended the definition of permitted cardox cartridges so as to bring the procedure for "permitting" them into line with that for "permitting" other explosives, as explained on page 47 of last year's Report.

General Regulations relating to mine lighting were made on 1st June, 1934. The scope of the new code is dealt with in the section below on mine lighting.

Following on these regulations, two Orders of general application were made, one relating to conditions of use for safety lamps, which was made on 11th July, 1934, and the other to the marking of lamp bulbs, which was made on 31st July, 1934.

The first-mentioned Order prescribes general conditions of use to apply to the various classes of approved types of safety lamps,

* Cmd. 4780. H.M. Stationery Office. Price 9*d*. net.

† Report of the Overwind Prevention Committee. H.M. Stationery Office, 1935. Price 9*d*. net.

e.g., types approved for general use, types approved for use as officials' inspection lamps, and so on. As regards types which had been approved in the past, the effect of this Order was merely to standardize the various kinds of conditions which already applied, and it did not impose any restrictions that did not already exist. As regards the future, each approval granted to a lamp maker will state under what schedule and class the particular type of lamp is approved, and it will therefore not be necessary to publish particular conditions of use for individual types. The Order in both respects simplifies the position for the colliery managements.

All the approved types of safety lamp have been classified in accordance with the provisions of this Order in the list printed in the 1935 edition of the volume of " Regulations and Orders relating to Safety and Health."

The second Order provides, for small bulbs of approved types, that the official approval-mark shall be applied to the glass if there is insufficient space for it on the cap of the bulb (on which it is, in general, required to be placed, by the Second Schedule to the regulations).

(b) *Applicable to Individual Mines and Quarries*

During 1934 Special Regulations and Special Rules were established at individual mines and quarries to supplement the provisions of the Statutes and Regulations as follows :—

(i) *Mines under the Coal Mines Act,* 1911 :—

Airways.—Prescribing minimum distances between main airways and the distances from one another of connexions between main airways (Section 42 (5)) 4

Electricity.—Modifying or supplementing the provisions of General Regulation 78* to enlarge the limits of underground lighting by fixed electric lamps 8

Supplementing General Regulation 78* so as to permit the use of fixed electric lights at the coal face.. 1

Internal combustion engines.—Regulating the use of internal combustion engines underground (Section 87) 1

Pass-byes.—Substituting for the requirements in the Act other provisions for securing safety at pass-byes (Section 43 (3)) 1

Safety lamps.—Regulations for the use of safety lamps as a temporary precaution in a naked light mine (Section 87) .. 1

* This Regulation has been revoked by the Coal Mines General Regulations (Lighting) 1934, but the Special Regulations made thereunder remain in force until individually revoked (see p. 56 of this Report). Twenty-eight such individual revocations were effected during 1934.

(ii) *Metalliferous Mines* :—

Special Rules (Section 24) :—

Haematite Mines Code	1
Lead Mines (Derbyshire) Code	1
Installation and use of Electricity	1
Surface Lines and Sidings	2

(iii) *Quarries* :—

Special Rules :—

General Code (1924)	100

Exemptions and consents were granted or renewed during the year—subject in the majority of cases to special conditions for ensuring safety—under powers conferred by the Statutes and Regulations as follows :—

Mines under the Coal Mines Act, 1911 :—

Electricity.—Exempting flexible cables for portable drills from certain requirements in respect to earthing conductors (Regulations 125 (*b*) and 137 (*a*)) 60

Permitting the use of unarmoured cables and the earthing of a point other than the mid-voltage point of an electrical system (Regulation 129 (*e*)) 4

Internal combustion engines.—Consenting to the use of internal combustion engines underground (Section 58) 1

Rescue : General Regulations of 10th December, 1928 :—
Exempting from all the requirements.. 1

Safety lamps.—Exempting from the use of safety lamps after an explosion of inflammable gas causing personal injury (Section 32 (1) (*b*)) 2

Shafts and Outlets.—Exempting from the provisions requiring two shafts or outlets (Section 36) 5

Winding apparatus.—Exemption from providing a detaching hook (Section 40 (2)) 3

Exemption from providing an automatic contrivance to prevent overwinding 1

3.—Mine Lighting

The discussions which led up to the establishment on 1st June, 1934, of the Coal Mines General Regulations (Lighting), 1934, have been dealt with in previous Reports, and need not be referred to again. It will suffice to deal briefly with the regulations themselves, which are divided into three parts, whose scope may be outlined as follows :—

(a) *Lighting by means of safety lamps*

In mines in which safety lamps are used persons wholly or mainly employed at the working-face, or at face rippings, or at places where tubs are mechanically filled, must in future be provided with safety lamps of types which, when new, satisfy certain requirements as regards their lighting performance, in addition to being approved for safety as in the past. This requirement came into force with respect to new lamps on 1st September, 1934, but lamps of types which were already in lawful use can continue to be used by persons to whom the regulation applies until 31st December, 1936. The purpose of the period thus allowed is to enable an orderly change-over to the new lamps to be pursued and completed. It is not a period of postponement in which no action need be taken, and any delay by colliery managements in this respect will not be accepted as an excuse for failure to make full compliance with the regulation by the appointed date.

This part of the regulations applies to all mines or parts of mines in which safety lamps are used, and there are only two exceptions :—

(i) In respect of places where, in addition to the safety lamps carried and used by the persons employed, other means of lighting are provided, e.g., compressed-air lamps, mains lighting (where specially permitted) or additional safety lamps hung up as a means of general lighting. In such circumstances the safety lamps carried and used by the persons employed need not comply with the new lighting standards if the Divisional Inspector is satisfied that the actual lighting of the place is as good as it would be if only lamps complying with the new requirements were used.

(ii) If a workman is provided with two lamps—one being primarily for lighting and the other primarily a gas detector, the new requirements do not apply to the second lamp.

Types of lamps which satisfy the prescribed requirements as regards lighting performance (after being tested at the Department's Testing Station under certain standard conditions which have been published in the official Testing Memorandum*) are approved under Schedule A of the Safety Lamps (Conditions of Use) Order, 1934, and are required to be marked "Approved under Lighting Schedule." For each type of lamp a detailed statement of the average measured lighting performance under the standard conditions of test forms part of the instrument of approval which is issued to the manufacturer. For electric lamps in Schedule A the bulbs, too, must be of appropriate ratings and types which comply with suitable performance standards which

* Testing Memorandum No. 1 : Test and Approval of Safety Lamps. H.M. Stationery Office. 1934. Price 2*d*. net.

are also described in the Memorandum referred to. These new requirements have necessitated the testing and approval by the Department of the performance of a large number of types of safety lamps and lamp bulbs. A list of 31 types of lamps approved under Schedule A and of 42 types of bulbs was published at the beginning of September, 1934, when this part of the regulations came into force; a more up-to-date list is included in the 1935 edition of the volume of " Regulations and Orders relating to Safety and Health."

A further important provision of this part of the regulations is the requirement that the safety lamps to which it applies must be maintained and used in such a manner that their lighting performance will not deteriorate unreasonably in service. Compliance with this requirement will be primarily a matter of having a properly equipped and organized lamp-room, and of intelligence and care on the part of the lamp-room staff in the cleaning, maintenance and repair of the lamps. It is clear that the standard already maintained in this respect at the better organized lamp-rooms—and without any serious difficulty or expense—is far in advance of the standard at a considerable number of mines where, under existing conditions, the deterioration in the lighting power of the lamps used is excessive and unreasonable and where, therefore, energetic measures will have to be taken to comply with the new requirement.

The statistics regarding safety lamps in Table 43 relate to the position at 30th June, 1934, that is to say, to a period before the new regulations came into force. The figures reflect the extent to which mine owners had voluntarily installed lamps of improved candle-power, especially electric lamps. Of the 395,000 electric lamps in use at that date nearly 45 per cent., and of the 243,000 flame lamps approximately 1 per cent., were of types that would satisfy the requirements of the regulations, though not necessarily of types which have actually been submitted by the makers for approval. Since the corresponding date in the previous year, there had been an increase of 4,000 in the number of cap-lamps in use, and the proportion of electric hand lamps fitted with 2·5-volt and 4-volt batteries had increased from one-quarter to two-fifths of the whole.

(b) *Lighting otherwise than by safety lamps*

The second part of the regulations deals with lighting underground by other means than safety lamps, and it came into force on 1st July, 1934.

In safety lamp mines, the use of fixed lights fed by current from the electric mains had previously been restricted to the area defined by No. 78 of the General Regulations dated 10th July, 1913, except in some 74 mines for which the use of mains lighting nearer the face has been permitted by special regulations. The " permitted " area is now extended in roads ventilated by intake air

up to 50 yards from the working-face, and in other roads up to 100 yards from the working-face.

At 30th June, 1934, there were in use nearly 86,000 lighting points operated from the mains, but most of these were at pit bottoms and sidings (43,766) and at stables and machinery rooms (25,570). The number of lighting points on roadways was 16,376 and on working-faces 83. All the face lights and some of the roadway lights were covered by the special regulations referred to above. These special regulations remain in force until individually revoked (Regulation No. 9); but most of them relate to areas which fall within the extension now permitted generally and steps are being taken to revoke each of them as soon as the installations have been brought into compliance in other respects with the new requirements.

In respect of the area previously covered by General Regulation 78, and now covered (without change) by paragraphs (*a*) and (*b*) of the new Regulation 11, the only new requirements imposed are that the pressure in the lighting system shall not exceed 125 volts, and that the neutral or mid-voltage point of the lighting system, as the case may be, shall be earthed. Lighting in this area by direct current at any mine in which such lighting was installed on the 31st May, 1934, is excepted from these new requirements.

As regards the new area defined in paragraph (*c*) of Regulation 11, in which mains lighting is now generally permitted for the first time, the following additional requirements apply :—

(i) Mains lighting must not be installed in any ventilating district without the written permission of the Divisional Inspector, unless in that district electric power is already lawfully in use at the working-face.

(ii) If in any ventilating district electric power is already lawfully in use at the working-face, it is sufficient for notice of the installation of mains lighting in the district to be sent forthwith to the Divisional Inspector.

(iii) All electrical apparatus installed or used for mains lighting in the new area must be of a type approved* by the Board of Trade.

Wherever considerations of safety permit, proposals to use mains lighting further inbye than the area covered by paragraph (*c*) of Regulation 11 will be considered on their merits. Special Regulations will be necessary in such instances for each mine.

Provision is also made in the regulations for permitting fixed electric lighting from a source of current within the lighting fitting, such for example as the compressed-air lamp. At 30th June, 1934,

* For the purpose of this requirement any apparatus of a type that has been certified by the Mines Department in respect of its flameproof enclosure is deemed to be of approved type.

1,204 lamps of this kind were in use, compared with 864 a year previously.

(c) *Surface lighting and whitewashing*

The third part of the regulations which came into force on 1st September, 1934, requires that sufficient and suitable lighting must be provided in all places on the surface where persons regularly work and, underground, at shaft insets and shaft sidings. In addition, except on proof by the manager that the natural conditions render it not reasonably practicable, certain important places underground, such as sidings, landings, passbyes, offtakes and rooms containing engines, motors, or electrical apparatus, must be kept effectively whitewashed.

It is early yet to deal with the effect of these provisions, but already a great improvement is known to have resulted from the extended use of whitewash which is now necessary.

4.—The Provision of Firedamp Detectors for Use by Workmen

The Report for 1933 included an outline of the reasons which led the Secretary for Mines early in 1934 to draw up, for consideration by the representative Associations in the industry, a preliminary draft of general regulations requiring the provision of firedamp detectors for use by workmen underground. During 1934 these proposals were discussed with each interested party in turn and their views obtained, compared and re-discussed. The draft was revised in the light of the discussions so as to represent a fair compromise between the conflicting views that had been expressed and a reasonable attempt to meet the many difficulties as definitely as the very wide variation in the relevant conditions at different mines will permit, and the revised draft was formally published in accordance with the procedure laid down in Section 86 of the Coal Mines Act, 1911, early in January, 1935.

One of the principal difficulties met with in framing the draft was concerned with fixing the proportion of detectors to be provided. The Miners' Lamps Committee, reporting* in 1922, had found it impossible to make any definite suggestions that would meet in general terms the widely varying circumstances that had to be faced. They recommended that the matter should be left largely to the discretion of the managers individually and that each manager should fix for the mine under his charge the appropriate number of detectors required. But during the discussions in 1934, the Mineworkers' Federation urged strongly that at least minimum proportions should be laid down, and they had in fact begun by

* Miners' Lamps Committee. Report on the general use by workmen of safety lamps which give no indication of inflammable or noxious gases (Memorandum No. 7). H.M. Stationery Office. Price 6*d*. net.

recommending that the minimum should be one (flame) safety lamp or other approved detector for every eight men in longwall workings, and one for every four men in other types of working. This recommendation, in the context given to it by the proposals under discussion, was eventually accepted by both the Mining Association and the National Association of Colliery Managers, and in the circumstances it was embodied in the draft regulations. But it was realised that it is impossible for any rigid proportion fixed in this way to be capable of meeting with equal adequacy the requirements of a face on which the workmen are concentrated and those of one on which they are scattered, or even of so meeting the requirements for a single face during the different shifts if, as is often the case, very different numbers of workmen are employed on the different shifts. A certain degree of elasticity was therefore introduced by calculating the number of detectors to be provided according to the total number of workmen involved, leaving discretion to the manager as to the distribution of those detectors as between the different shifts and over the different districts, and by the reservation to the Board of Trade of power to permit lower proportions in mines where the deputies' duties are so arranged that each makes at least four inspections for gas during his shift. Furthermore, in cases of special difficulty recourse could be had, by either the Divisional Inspector or the workmen or the management, to the provisions of the Act which allow of the establishment of special regulations to modify the general regulations.

The draft proposed, then, that in safety lamp mines the management must provide for the use of workmen a sufficient number of firedamp detectors of approved type. It would be the manager's duty to select (from a list of officially approved types) the type or types of detector to be provided and to determine the number and distribution of the detectors, subject to the minimum requirements which are laid down. The workman to whom a detector is issued would be charged with the duty of using it. He must be instructed in its use and know how to use it, and, with the flame safety lamp and possibly with certain other types of detector which are not automatic and which therefore demand a certain degree of skill in handling, he must have a simple certificate as to his competency to do so. It was provided that the use of the detectors so issued should not in any way be a substitute for the statutory examinations already required to be made by deputies or shotfirers. All such examinations must continue to be made with the flame safety lamp.

The Mineworkers' Federation lodged a general objection to the draft and asked for amendments which would require all the detectors approved and provided under the regulations to be of automatic types. After further discussion this objection was withdrawn and an Order was made establishing the regulations in the form of the draft, to operate for two years from 1st October,

1935. Towards the end of that period a representative committee will be set up to study their working in the light of the experience gained.

At the end of 1934 the only type of automatic detector which had been developed sufficiently for general use in mines in this country was the Ringrose Automatic Firedamp Alarm. This device had been improved from time to time as a result of various trials, some of which have been described in previous Reports, and early in 1935 nearly 600 detectors of the improved pattern were in use, most of them being installed in mines belonging to the Stavelev Coal and Iron Company, Limited, and the Doncaster Collieries Association, Limited, though some 60 mines in all had one or more. An account of the experience gained with the installation in the Staveley group has been given by the Company's Agent in a paper read to the National Association of Colliery Managers and published in the technical press. It appears from this account and from the investigations of H.M. Inspectors that the system of operation at these collieries is well organized and applied by all concerned both at the lamp rooms and in the pits and that under these conditions the detectors preserve their accuracy well and serve their purpose.

Another type of detector which is fitted to electric safety lamps and which functions automatically upon the operation of a switch on the lamp, is the Gulliford. Detectors of this type have been in use in substantial numbers for some years in the mines of Denaby and Cadeby Main Collieries, Limited, and others are in use elsewhere, but not on an extensive scale.

5.—Safety in Mines Research Board

Mr. G. D. Budge, owing to pressure of business, found himself unable to give the time required for his work as a member of the Board and he resigned in July, 1934, about six months before the end of his full period of service. Professor J. F. Thorpe, C.B.E., D.Sc., F.R.S., who had been a member of the Board for 12 years, retired, under the rotational scheme of retirement, at the end of 1934. The Secretary for Mines desires to express his warm appreciation of the value of the advice and help given by these two members during their long service on the Board. At his special invitation, Professor Thorpe will continue in office as Chairman of the Explosives in Mines Research Committee.

Mr. F. L. Jacob and Professor E. K. Rideal were appointed to membership of the Board as from 1st January, 1935, in succession to the members mentioned above and Mr. Mark Brand was appointed at the same time, in place of Mr. C. C. Reid, whose retirement was reported in last year's Report.

The Annual Meeting of the Institution of Mining Engineers was held at the Board's Research Station at Buxton on 13th July, 1934, when about 200 members were present. They were able to inspect

the research work in progress at the Station, and, as a matter of particular interest at the time, to examine an exhibit of miner's flame and electric safety lamps, designed to comply with the new Mine Lighting Regulations, which had been arranged in co-operation with the lamp manufacturers. Photometers were provided for testing the lighting performance of the lamps and gas chambers for examining the gas-detecting qualities of the flame safety lamps.

Gratifying progress is being made in the use of protective clothing such as hard hats (now very extensively used), gloves and boots; and in the development, in co-operation with manufacturers, of new or improved equipment of this kind. Practical experience among miners has proved beyond doubt to their own satisfaction that many accidents have been avoided or their consequences made less serious by the wearing of such equipment. In co-operation with the Safety in Mines Research Board and to promote further progress as vigorously as possible, the Secretary for Mines has seconded Mr. W. F. Richardson, Junior Inspector of Mines, for a period of three years to devote his whole time to this subject, under the general supervision of the Board's chief mining engineer, Major Hudspeth, D.S.O., M.C., M.Sc.

Detailed particulars of the progress of the Board's work are published separately in their Thirteenth Annual Report.

6.—Testing Work

The testing work of the Department has continued in the same general categories as in recent years but the growth in its volume has put a heavy strain on the testing staff. It comprises the testing, with a view either to statutory approval or to official certification on a voluntary basis, of safety lamps (both for safety and lighting performance), explosives and shotfiring apparatus, flameproof electrical apparatus, electric signalling and telephone apparatus and rescue apparatus. Examination is also made of any other apparatus which may need special consideration from the standpoint of safety against explosion risks prior to trial or use underground.

The present tendency to increased mechanization is reflected in the demand for electrical apparatus of types certified as flameproof by the Department and considerable pressure has been experienced at Buxton in connexion with the flameproof testing. The testing of explosives (by H.M. Inspector of Explosives) is also carried out at Buxton, the testing of rescue apparatus at Doncaster and the remainder of the testing work at Sheffield. Close co-operation is maintained with the work of the Safety in Mines Research Board through the Director of Research Stations, Professor R. V. Wheeler, D.Sc., F.I.C., F.G.S., and a certain amount of research into matters bearing on the testing work is undertaken by the testing staff.

In the following pages the chief matters dealt with at each station are treated in detail.

(a) *The Testing Station, Sheffield*

The work of this Station was continued during the year under the supervision of the Superintending Testing Officer, Captain C. B. Platt, M.B.E.

(i) *Safety Lamps.*—In addition to the preliminary tests which were necessary before the publication of the first list of types which would comply with the requirements of Part I of the Lighting Regulations, complete type tests were carried out on six flame and 18 electric lamps for approval under Schedule A and one flame and nine electric lamps for approval under Schedule B.

Much time was also devoted in the earlier part of the year to preparing for the testing of bulbs intended for use in Schedule A electric lamps and, after the publication of the new regulations, to the tests themselves.

(ii) *Electrical Shotfiring Apparatus.*—One new type of battery exploder was approved during the year under the Explosives in Coal Mines Order, 1934. In addition, check tests were carried out during the year, as in previous years, on 5 per cent. of each manufacturer's output of approved apparatus.

(iii) *Mining Bells, Relays and Telephones.*—The pamphlet on "Electrical Signalling Systems and Telephones in Mines,"* issued in 1933, indicated the precautions necessary to ensure the safety of electric signalling apparatus in the presence of firedamp and illustrated diagrammatically the circuits commonly used for bells and relays connected in parallel, specifying which circuits were considered to be safe and which were either definitely unsafe or were regarded with doubt. As the result of further investigations a circular† was issued in June, 1934, announcing that certain systems of series connexions could also be accepted as safe.

It had also been emphasized in the original pamphlet that the Department's certificates of intrinsic safety did not hold good, as regards magneto-telephones, if instruments of different types, whether certified or not, were connected in the same circuit. Since the publication of that pamphlet, research has been carried out with a view to the removal of this restriction and it has been found that the addition of a condenser of suitable capacity across the bell terminals of each telephone in a circuit will permit the safe inter-connexion of all certified types of mining magneto-telephones. An announcement to this effect has been made by circular‡ and arrangements have been made with the makers of certified telephones for condensers of the correct capacity and approved type for each make of instrument to be placed on the market. It has also been

* Mines Department Safety Pamphlet No. 8. H.M. Stationery Office. Price 3*d.* net.

† M.D. Circular No. 69.

‡ M.D. Circular No. 75.

made a condition of certification that all new instruments sold in future shall have the condensers fitted before delivery and care should be taken to verify that they are so fitted before the telephones are installed.

It appears necessary, however, to avoid misunderstanding, to make it clear that, even with such condensers fitted, none but certified instruments may be connected in a circuit intended to be intrinsically safe. The addition of a condenser will not render safe an instrument of uncertified type, and the inclusion in a circuit of a single uncertified telephone may destroy the safety of the entire telephone system. It follows that any surface telephones directly connected to an underground circuit must also be of certified type. Where the surface system contains uncertified instruments it must, to ensure safety, be isolated from the underground system by a switchboard or other coupling of suitable certified design.

The only permissible alternative is to use, throughout the danger-zone, flameproof instruments with properly fitted armoured-cable connexions.

During 1934 five certificates were issued for telephone apparatus such as switchboards and extension bells, and seven certificates for signalling bell and relay apparatus.

Lists of all certified electrical signalling and telephone apparatus are published annually in the volume of " Regulations and Orders relating to Safety and Health."

(iv) *Analysis of Mine Air and Mine Dust Samples.*—The numbers of samples of mine air and mine dust analysed during 1934 were 2,281 and 5,247, respectively, as compared with 4,500 and 4,436, respectively, in 1933.

(b) *The Testing Station, Buxton*

(i) *Flameproof Electrical Apparatus.*—The type-testing of the flameproof enclosure of electrical apparatus was continued during 1934 by the Testing Officer, Mr. H. Rainford, under the general supervision and direction of H.M. Electrical Inspector of Mines.

Certificates are issued in respect of apparatus for mining use which is of satisfactory design and proves flameproof under test. Additional test to prove the necessary strength of structure is required if doubt arises as to whether the flameproof enclosure is sufficiently robust.

For mining use the ordinary test is made with methane within and without the enclosures, but with some apparatus, e.g., oil-immersed switchgear, hydrogen is substituted for methane within the enclosures. Tests are also undertaken with pentane, or both hydrogen and pentane, for apparatus to be used in other industries where the danger may be from petroleum or acetone vapour and proposals are under consideration, in conjunction with the Home Office, for research with a view to choosing representative gases or

vapours which may afford suitable tests for apparatus to be used in industries where other dangerous atmospheres are encountered.

During the year, 184 new applications for certification were received, compared with 132 in 1933, and 133 certificates were issued covering a wide range of apparatus. In addition, 10 duplicate certificates were issued to manufacturers desiring to market independently apparatus submitted for test by other makers and eight reports were issued in respect of apparatus not eligible for certification. Many applications for test were pending at the end of the year, and an addition has been made to the testing staff in order to avoid undue delay and to provide a margin for experimental work which arises in connexion with the testing work or the formulation of standards of design.

In order to facilitate identification of electrical apparatus of certified types for industrial use, a mark, known as the Flameproof Certification Mark, has been registered in the name of the Secretary for Mines under the Trade Marks Acts, 1905 to 1919, the mark consisting of the outline of a crown with the letters FLP therein. The mark may only be applied under licence granted by the Secretary for Mines, and subject to certain stipulated conditions, one of which is that samples of apparatus must be submitted for check test when required, and the mark indicates that the apparatus on which it is placed is of a type certified by the Department as flameproof. Licences to use the mark on apparatus of certified types have been granted to over 40 manufacturers of flameproof apparatus.

(ii) *The Testing of Permitted Explosives.*—During the year 11 explosives were submitted for the Permitted List, and were tested in the Buxton testing gallery by H.M. Inspectors of Explosives on behalf of the Mines Department under a standing arrangement with the Home Office. Of these 11, nine passed and two failed. The nine explosives which passed the tests included five new compositions and four explosives which were already on the Permitted List with unwaxed paper wrappers, but which were retested with waxed paper wrappers with a view to their issue sheathed with sodium bicarbonate. Including one explosive tested towards the end of 1933, six additions were made to the Permitted List during 1934, and one explosive was removed, making the number of explosives on the List at the end of the year 53 (43 permitted for general use and ten permitted only for bringing down coal), exclusive of explosives not manufactured in Great Britain or manufactured for export only. The use of "sheathed" explosives continued to increase and by the end of the year 14 different explosives were available with sodium bicarbonate sheath.

In this section of the Report it is convenient to record the issue by H.M. Chief Inspector of Explosives on 19th January, 1935, of a circular to detonator manufacturers commenting on the desirability of avoiding sulphur and other readily inflammable materials in the

manufacture of electric detonators, especially for sealing and waterproofing, and pointing out that considerable progress has recently been made in the development of suitable sealing and waterproofing compositions of a relatively " non-inflammable " character.

As a result of this action the manufacturers concerned have adopted these new compositions, and it is hoped that the risk of burning fragments of sealing composition being blown out from a shothole which has sometimes caused anxiety in the past has been eliminated.

(c) *Testing of Rescue Apparatus* (*Doncaster*)

The testing of rescue apparatus continues to be carried out at the Doncaster Rescue Station by Mr. P. L. Collinson, B.Sc., H.M. Junior Inspector. Besides testing rescue apparatus the Testing Officer inspects rescue stations in all the coalfields and inquires into cases of misadventure in the handling and use of apparatus.

A modified form of Blackett's Brown-Mills Aerophor breathing apparatus was tested and approved : it differed from the previously-approved apparatus in that the non-return valve in the inhalation tube was omitted. An appliance named Brown's Utility Apparatus was tested at the same time. The Utility Apparatus is identical in construction with the Aerophor except that it has no liquid air pack. It is designed for attachment to the Aerophor with the object of enabling the excess air given off through the relief valves of the latter to be used by a second person in case of need. The test showed that subject to certain conditions this apparatus can safely be used with the Aerophor.

A one-hour type of compressed oxygen breathing apparatus was tested on behalf of the Home Office for the purposes of the Chemical Regulations made under the Factory and Workshop Act : the apparatus failed to pass the tests.

The Advisory Committee on Rescue Work and Rescue Apparatus (see page 218) held three meetings during the year and its recommendations, in so far as they were of general application to mine rescue work, were communicated to all Rescue Station Authorities. The most important recommendations related to (1) the periodical testing of cylinders used with breathing apparatus and reviving apparatus, (2) the conversion of " Proto " Mark I breathing apparatus into " Proto " Mark II breathing apparatus, and (3) the use in " Proto " Mark I apparatus of certain parts of " Proto " Mark II apparatus.

The Committee during the year again considered the question of the use at rescue stations and mines of reviving apparatus designed to administer a mixture of oxygen (93—95 per cent.) and carbon dioxide (5—7 per cent.). As a result of their recommendations the Department issued a circular (M.D. Circular No. 76, dated 28th February, 1935) recapitulating the great advantages of this

treatment—particularly in cases of shock or carbon monoxide poisoning, and intimating that the Rescue Regulations would be amended to make this method of treatment compulsory instead of the method of treatment by pure oxygen. The draft amending regulations were issued to the industry in the spring of 1935.

7.—Training of Boys

The movement to provide safety classes for colliery boys in the several coalfields made substantial progress during 1934. Classes inaugurated in earlier years were continued in Durham, Northumberland, Yorkshire, Nottinghamshire, Derbyshire, Lancashire, North Staffordshire, and Kent. Classes usually meet for 1½—2 hours a week during the winter months and the object is to give the boys elementary safety instruction about the various operations they may be called upon to perform in the course of their work; in most cases the teachers are experienced mining officials from the neighbourhood, and the classes are arranged by the Local Education Authorities.

Some of the boys in Nottinghamshire, Derbyshire and Kent, having completed their instruction in the safety classes, were so interested and attracted that they joined other classes at evening schools or mining centres. In Lancashire, the Leigh County Education Authority arranged a course to bridge the gap between the safety class and a mining course proper and 22 boys enrolled for this course when it commenced in the autumn of 1934.

During 1934 classes were started in several new areas including Lanarkshire, Ayrshire, Dumbartonshire, Stirlingshire, and Midlothian in Scotland; Leicestershire, South Derbyshire, Lancashire (Burnley) in the English coalfields; and in Denbighshire and South Wales. In the last-named coalfield, a few classes had been arranged during 1933 by local committees representing owners, officials and workmen. Progress was made during 1934 and in the latter part of the year the formation and conduct of classes were taken in hand by the Local Education Authorities working in conjunction with the Joint Mining Education Advisory Committee for the Monmouthshire and South Wales coalfield. The work needs wider support, however, and a great deal remains to be done before it can be said that boys employed in South Wales mines enjoy as good facilities for safety instruction as exist in many of the other coalfields.

The Safety Badge scheme which originated in Yorkshire in 1931 has been adopted in most districts in connexion with these safety classes, that is to say, boys who complete a certain minimum number of attendances and who qualify in an oral examination at the end of the course are awarded a "Safety Badge." In most cases the cost of these badges is provided out of a grant made by the local Welfare Committee, and the badges are presented to the boys

at a public function. During 1934 four of the ceremonies were held at the Buxton Research Station, by invitation of the Safety in Mines Research Board, and some 1,100 boys from Derbyshire and Nottinghamshire visited the Station where, in addition to receiving their badges, they witnessed a coal dust explosion and other experimental demonstrations on matters of safety. The Secretary for Mines presented the badges on two of these occasions, and H.M. Chief Inspector of Mines, on another. Mr. Ernest Brown also visited Stirlingshire in December and, in company with the Divisional Inspector, the Director of Education, officials of surrounding collieries, and the Stirlingshire Miners' Agent, saw classes in session at Stirling, Fallin, Cowie, Plean and Kilsyth.

The number of centres at which safety classes were held for boys during the winter session 1934—35 and the number of boys who attended the classes are summarised in the following table :

Safety Classes for Colliery Boys

Session 1934—35.

Division.	No. of Centres.	No. of Boys enrolled.	No. of Badges or Certificates awarded.
Scotland	23	1,043	656
Northern	63	3,266	2,102
Yorkshire	64	2,413	1,103
North Midland	51	1,999	1,038
North Western	7	896	492
Cardiff and Forest of Dean ..	34	648	81
Swansea	14	245	—
Midland and Southern	5	137	51

There are some districts where no arrangements have yet been made to provide safety classes but the Secretary for Mines hopes that the Education Authorities concerned will receive the support of all sections of the industry to enable them to arrange classes during the coming winter. Arrangements are understood to be in train for inaugurating classes in the autumn of 1935 in Fifeshire by the County Education Committee, in the Cannock Chase coalfield by the Staffordshire Education Committee, and in Warwickshire by the County Education Committee.

8.—Monthly Accident Summaries

In accordance with the practice begun several years ago the Department issued to the technical press, to mining lecturers, and to others interested, monthly statements of accidents at mines and quarries, respectively.

The particular object of the monthly statement for mines is to give publicity to the most recent figures as a frequent reminder to all concerned, and, without minimising in any way the importance of other causes of accidents, to emphasise in particular by a few examples the ever-present need for personal care in the avoidance of undue risks.

After publication the statements are reprinted in pamphlet form by the technical press and large numbers of copies are sold by them to colliery owners for distribution to workmen

The statements regarding quarries contain descriptions of all fatal accidents as well as descriptions of the more serious non-fatal accidents.

These statements have an increasingly wide circulation and many fresh applications for copies were received during the year.

9.—Statutory Examinations for Colliery Officials

(a) *Board for Mining Examinations*

The Board has suffered the loss of two members by death and one by resignation.

Mr. James Robson, for 16 years one of the representatives of workmen employed in mines, died in September, 1934. He was an able advocate and his advice both on the Board and on several of its Committees was always ungrudgingly given.

Owing to ill-health, Mr. Samuel Hare, representative of mining engineers, felt obliged to sever his connexion with the Board. Mr. Hare was one of the original members appointed in 1912 when the Board was set up. He has throughout taken a very prominent part in its deliberations and in 1921 was elected a Vice-Chairman, a post which he held up to the date of his resignation. The Board sincerely hope that Mr. Hare's health will improve and that he will long enjoy his retirement.

A further loss was sustained early in 1935 by the death of Mr. D. Farr Davies, the well-known mining engineer. Before he was appointed a member of the Board Mr. Davies had acted for many years as one of its Local Examiners in South Wales so that he was able to speak from practical knowledge of the examinations. His loss will be much felt.

These vacancies have been filled by the appointments of Mr. W. Lawther, Mr. F. L. Booth, and Mr. T. L. Mort.

The Board have heard with sincere regret that in the early part of 1935, Mr. E. G. Williams, who has been their Secretary since 1921, will retire from the Civil Service on reaching the age limit. The members have always felt that Mr. Williams has been just what a secretary should be, and they were particularly gratified when in 1934 His Majesty The King was pleased to appoint him to be a Companion of the Imperial Service Order. Mr. Williams will take

with him in his well-earned retirement the affectionate wishes of the Board.

The new rules (S.R. & O., 1933, No. 1166) re-organizing the scheme of examinations for Managers' and Under-managers' Certificates came into force on 1st March, 1934, and applied, therefore, to both examinations held in 1934. The principal modifications which were summarised on page 62 of last year's Report have met with general appreciation and the organization for the separation of the written and oral parts of the examinations proved entirely satisfactory.

The decline in recent years in the number of candidates for Certificates of Competency has been checked. 612 candidates attended the examinations in 1934, an increase of 41 compared with 1933 and the first occasion for several years when any increase has been recorded. Nevertheless the number of candidates who qualified for certificates was only 139, which compares disappointingly with 187 in the previous year.

Of 307 candidates who sat for First Class Certificates, 168 (of whom 29 passed) had previously obtained Second Class Certificates and it is evident that minor officials and working miners continue to constitute a substantial proportion of the aspirants for managerial posts.

32 First Class and 43 Second Class candidates qualified for certificates at their first attempt.

Taking the First Class and Second Class examinations together, of 401 candidates who failed in the written examination, 11 obtained a sufficiently high percentage of marks in the six subjects collectively to be eligible under the new rules for re-examination in their weak subject, without having to take the whole examination over again, and the 208 candidates who were examined orally included four who were eligible under the new rules for re-examination orally without sitting for written examination again.

The new rule permitting Second Class candidates to sit at the age of 21, instead of 23, attracted 8 candidates between these ages and four of them passed, although, as prescribed by the rules, their certificates will not be issued to them until they attain the age of 23. It is considered probable that, as this innovation becomes more widely known, an inflow of younger students to mining courses will increase the number of candidates between 21 and 23 years of age.

The number of candidates for Mine Surveyors' Certificates showed a modest increase from 198 in 1933 to 219 in 1934 (the latter being the largest total since 1930), but only 48 of these 219 candidates qualified (by obtaining the prescribed 60 per cent. of marks in the written examination) for the oral and practical tests, and the number who finally qualified for certificates fell from 38 to 35.

After each of the written examinations for Surveyors' Certificates the Presiding Practical Examiners met to consider the questions set, before devising the subsequent oral and practical tests, and their general opinion was that the papers as a whole comprised fair and reasonable tests for candidates properly prepared. After careful study of the questions and after considering the Examiners' reports, the Board have reluctantly come to the conclusion that the unsatisfactory results must be attributed to the candidates' lack of knowledge of mine surveying and of its inherent problems, and they are satisfied that no lowering of the existing standard should be authorised.

Detailed figures relative to the Board's examinations held in 1934 are given in Tables 60 and 61 of Appendix A.

Copies of the questions set at the written examinations were placed on sale as usual, and copies of the Central Examiners' reports were issued to teaching institutions and to the technical press in accordance with established practice.

The formulation of specific proposals to impose a preliminary standard of general education upon future entrants for Managers' and Under-Managers' Certificates has made good progress during the year. Certain difficulties which arose in regard to local machinery have been removed after discussion with educational bodies concerned, and rules have been drafted to make the proposals effective. When the new rules become operative future candidates who are now less than 17 years of age will be required to produce certificates to show that they have passed examinations of an approved standard in English, mathematics, science and drawing, or to produce evidence of superior qualifications.

(b) *Examinations for Firemen's and Shotfirers' Certificates*

These examinations are conducted in mining districts by Local Education Authorities and Mining Institutions approved by the Secretary for Mines under the provisions of Section 15 of the Coal Mines Act, 1911. The examinations are visited from time to time by Inspectors of Mines in order to ascertain that reasonable uniformity of administration is maintained. An analysis of the results of the examinations held in 1934 will be found in Table 59 of Appendix A.

10.—Plans of Abandoned Mines

To assist those immediately responsible for dealing with the difficult problems—particularly those of safety—which arise from the proximity of old workings to present-day workings, the Mines Department has prepared, and is doing all in its power to extend and keep up-to-date, an informative Catalogue of Plans of Abandoned Mines. The position and approximate extent of the old workings

are catalogued by reference to the corresponding Ordnance Survey Sheet and the whole work is in charge of a qualified Mine Surveyor.

Brief particulars of this Catalogue which was first published in five volumes between December, 1928, and May, 1931, and of the Supplements which are published annually, will be found on page 208. The Supplement for 1934 contains references to 275 plans deposited with or presented to the Mines Department during the year, and to nearly 200 other plans in private ownership which have been recorded through the courtesy and help of mining engineers and others. References to changes of ownership are also given.

From time to time important collections of old plans not previously catalogued are brought to notice and the Department's Surveyor is given facilities to deal with them.

The Department is always grateful for notifications of additional plans or of changes of ownership. As examples of the help which the Department receives in this way, the following may be mentioned. The original Catalogue contains references to numerous plans in the possession of Mr. T. E. Forster who practised as a mining engineer at Newcastle-on-Tyne. When Mr. Forster died part of his collection of plans came into the possession of Messrs. W. Armstrong and Sons of Newcastle-on-Tyne. Others were sent to the North of England Institute of Mining and Mechanical Engineers, and these the Institute subsequently presented to the Mines Department. Particulars of the change of ownership of nearly all the plans formerly held by Mr. Forster have been included in the Sixth Supplement of the Official Catalogue and the Secretary for Mines wishes to express his thanks to Messrs. Dees and Thompson, solicitors to the executors of the late Mr. Forster, to Messrs. Armstrong and Sons, and to the Council of the North of England Institute of Mining and Mechanical Engineers, without whose co-operation it would not have been possible to record these important changes.

Deposited plans which are open to inspection can be seen by appointment at the Mines Department between 10.30 and 12.30 and (Saturdays excepted) 2.30 and 4.30, or by special arrangement at the offices of the Divisional Inspectors of Mines. No charge is made for inspection; if copies of any plans are required, these can be prepared under competent supervision and supplied at a reasonable cost.

TWENTY-SEVENTH ANNUAL REPORT OF H.M. CHIEF INSPECTOR OF MINES.

CONTENTS.

TABLE OF INSPECTION DIVISIONS
Corrected to September, 1935.

H.M. Chief Inspector of Mines .. .. Sir H. WALKER, C.B.E., LL.D.
H.M. Deputy Chief Inspector of Mines .. .. .. F. H. WYNNE, C.B.E., B.Sc.
H.M. Electrical Inspector of Mines .. .. .. J. A. B. HORSLEY, O.B.E.
H.M. Deputy Electrical Inspector of Mines .. .. G. M. HARVEY, M.Sc.B.Eng.
H.M. Medical Inspector of Mines .. .. .. *S. W. FISHER, M.D., B.Ch.
Inspector for Special Duties .. .. P. S. HAY, O.B.E.

} Mines Department, Dean Stanley Street, Millbank, London, S.W.1.

No. of Division.	Names and Areas of Divisions.	Inspectors in charge, Telegraphic Address and Telephone Number.	Senior Inspectors.	Junior Inspectors.	Sub-Inspectors of Mines.	Sub-Inspectors of Quarries.	Inspectors of Horses in Mines.
1	**Scotland Division,** comprising the whole of Scotland.	E. H. Frazer, O.B.E., M.Sc., 122, George St., Edinburgh, 2. (Mines Inspector, Edinburgh.) (Edinburgh 27358.) *Private address :* (Temporary) 7, South Gray Street, Edinburgh, 9. (Edinburgh 41850.)	*H. T. Foster, B.Eng., 6, Bright's Crescent, Edinburgh, 9. A. Stoker, 136, Brownside Road, Cambuslang, nr. Glasgow.	*H. C. W. Roberts, M.C., B.Sc., Cliff Cottage, North Queensferry, Fife. H. R. Houston, B.Sc., 2, Gordon Drive, Glasgow, S.4. J. A. Grove, 32, Forrester Road, Corstorphine, Edinburgh, 12. G. A. Hoyle, B.A., 4, Rhannan Terrace, Cathcart, Glasgow, S.4. *Electrical :* R. Crawford, 11, Lockharton Crescent, Edinburgh, 11. (see also Division 2).	A. McCall, 60, Sydney Terrace, Craigentinny, Edinburgh, 7. *T. H. Hamilton, 41, Oswald Road, Ayr. *W. Dunbar, Holmlea, Coatbridge Road, Bargeddie, Lanarkshire. (Two vacancies.)	N. Gillies, 37, Milton Road West, Duddingston, Portobello, Midlothian.	A. McArthur, 8, Hyndland Avenue, Glasgow, W. (see also Division 2).
2	**Northern Division,** comprising Northumberland, Durham, Cumberland, Westmorland, the North Riding of Yorkshire, the detached part of Lancashire north of Morecambe Bay and the Isle of Man.	T. Greenland Davies, Crown Buildings, 63, Westgate Road, Newcastle-on-Tyne, 1. (Mines Inspector, Newcastle-on-Tyne.) (Newcastle 28664.) *Private address :* Rocklyn Lodge, Rowlands Gill, Co. Durham. (Rowlands Gill 34.)	T. L. McBride, B.Sc., Benton Cottage, Long Benton, Newcastle-on-Tyne. *H. S. S. Scott, Milbank, Western Hill, Durham.	*W. Wainwright, Hillside, Springwell, North End, Durham. *W. B. Brown, 6, Corkickle, Whitehaven, Cumberland (see also Division 5). H. S. Stephenson, West View, Fieldhouse Terrace, Durham. *T. A. Rogers, "Sunnyside House," 56, High St., Gosforth, Newcastle-on-Tyne, 3 T. A. Jones, 37, Hawthorn Road, Gosforth, Newcastle-on-Tyne, 3. *Electrical :* R. Crawford (see also Division 1).	W. Brown, M.B.E., 225, Osborne Road, West Jesmond, Newcastle-on-Tyne, 2. W. Goodin, Penrith House, Cockton Hill Road, Bishop Auckland. J. S. Jobling, 2, Wood View, Shincliffe, Durham. *W. Cummings, 19 Beatty Avenue, Jesmond, Newcastle-on-Tyne, 2. *Met. Mines :* R. Butler, 7, Lonsdale Terrace, St. Bees, Cumberland.	R. W. Ball, 28, Honister Avenue, High West Jesmond, Newcastle-on-Tyne, 2.	R. L. Layfield, M.B.E., Laburnum Cottage, Gilesgate Moor, Durham. E. A. Stubley, 5, Chelsea Grove, Newcastle-on-Tyne, 4. A. McArthur (see also Division 1).

3	**Yorkshire Division,** comprising East and West Ridings of Yorkshire, (except that portion of the West Riding which was transferred for administrative purposes from Lancashire by the Local Government Act, 1888).	H. J. Humphrys, D.S.O., M.C. (Acting), Lancaster House, West Laithe Gate, Doncaster. (Mines Inspector, Doncaster.) (Doncaster 784.) *Private address :* 119, Thorne Road, Doncaster. (Doncaster 1768.)	G. Cook, 13, Lidgett Park Road, Roundhay, Leeds, 8. *G. N. Scott, M.Sc. (Acting), 5, Crossways, Doncaster.	*T. Green, 18, Oxford Rd., Wakefield. *C. W. Scott, B.Sc., "Charnwood," 33, Fossdale Road, Sheffield, 7. *J. E. Henshaw, B.Sc., 10, Ayresome Avenue, Roundhay, Leeds, 8. *P. L. Collinson, B.Sc., 37, Axholme Road, Doncaster. *T. Gawthrope, 174, Hunter House Road, Sheffield, 11. *Electrical :* J. Cowan, 30, Abbeydale Park Rise, Totley Rise, Sheffield (see also Divisions 4 & 5).	*F. E. Stone, May Villa, 4, Gold Street, Barnsley. *A. Clarke, 83, Hawkswood Crescent, Kirkstall, Leeds. T. H. Stanton, M.C., 211, Dodworth Road, Barnsley. (One vacancy.)	G. Holden, 93, Horndean Road, Fir Vale, Sheffield, 5 (see also Division 4).	R. Baxter (see also Division 4). G. H. Mould, "Farlands," Bar Crescent, Doncaster Road, Wakefield (see also Division 4).
4	**North Midland Division,** comprising the Counties of Derby, Leicester, Lincoln, Nottingham, Huntingdon, Northampton, Rutland and Oxford.	J. R. Felton, O.B.E., Grosvenor House, Friar Lane, Nottingham. (Mines Inspector, Nottingham.) (Nottingham 43916.) *Private address :* "Kenilworth," Dovedale Road, Edwalton Hill, West Bridgford, Nottingham. (Nottingham 8063.)	A. H. Steele, 119, Melton Road, West Bridgford, Nottingham. *J. Hall, 366, Whirlowdale Road, Sheffield, 11.	A. L. Flint, 30, Clarence Road, Chesterfield *H. L. V. Evans, 106, Kedleston Road, Derby. T. E. Pickering, 37, King Edward Avenue, Mansfield. W. Gray, B.Sc., 57, Clumber Road, West Bridgford, Notts. *Electrical :* J. Cowan (see also Division 3).	F. Shooter, 132, Ashby Road, Burton-on-Trent. G. H. Sutton, 66, Tapton View Road, Chesterfield.	G. Holden (see also Division 3). E. Laundon, "Charnwood," Leicester Road, Groby, Leicester.	R. Baxter, 54, Wilson Road, Sheffield, 11 (see also Division 3). G. H. Mould (see also Division 3).
5	**North Western Division,** comprising part of Lancashire (namely, so much of the County as is not included in No. 2 Division) Cheshire, that part of the County of Stafford lying to the North of the Road from Uttoxeter through Bramshall Field and Milwich to Stone and thence through Norton Bridge, Eccleshall, Croxton, Hookgate and Almington to Market Drayton, Anglesey, Caernarvon, Denbigh, Flint, Merioneth, and Montgomery.	W. J. Charlton, O.B.E., Prudential Assurance Buildings, 78, King Street, Manchester, 2. (Mines Inspector, Manchester.) (Blackfriars 2669.) *Private address :* "Sunnyside," Brown's Lane, Dean Row, Wilmslow, Cheshire. (Wilmslow 505.)	T. Boydell, M.B.E., "The Brae," Wistaston, Crewe. *P. S. Lea, "Beech Lawn," Broad Oak Park, Worsley, Manchester.	*D. Coatesworth, "Sumerfield," 386, Walkden Road, Worsley, Manchester. *P. G. Dominy, M.C., B.Sc., 31, Hough Green, Chester. *W. B. Brown, c/o Mrs. Nelms, 48, Avondale Road, Wigan (see also Division 2). (One vacancy.) *Electrical :* J. Cowan (see also Division 3).	J. Duncan, 5, Eaton Bank, Accrington. *W. Roberts, 37, Birley Street, Newton-le-Willows. J. T. Shaw, "Hey House," 71, Hilton Lane, Little Hulton, near Bolton. J. A. Bloor, "Delmas," Wedgwood Avenue, Newcastle, Staffs. J. W. Wilton, "Oakdene," 36, Downall Green Road, Bryn, Wigan. *L. C. A. Benson, 105, The Avenue, London Road, Newcastle, Staffs. *Met. Mines and Quarries :* W. A. Vaughan, 4, Bryn Hyfryd, Stamford Street, Deganwy, near Llandudno.	Rhys Williams, 30, Friars Avenue, Bangor. O. Jones, 91, Ashworth St., Rochdale.	J. Evans (see also Division 8)

* Trained in the use of Rescue Apparatus.

TABLE OF INSPECTION DIVISIONS Corrected to September, 1935—*continued.*

No. of Division.	Names and Areas of Divisions.	Inspectors in charge, Telegraphic Address and Telephone Number.	Senior Inspectors.	Junior Inspectors.	Sub-Inspectors of Mines.	Sub-Inspectors of Quarries.	Inspectors of Horses in Mines.
6	**Cardiff and Forest of Dean Division,** comprising the County of Monmouth, part of the Counties of Glamorgan and Brecon†, the Counties of Radnor, Cardigan and Gloucester (West of the River Severn).	J. M. Carey, O.B.E., 2, Museum Place, Cardiff. (Mines Inspector, Cardiff.) (Cardiff 5995.) *Private address :* Trehedyn, Peterston-super-Ely, nr. Cardiff. (Peterston 7.)	E. S. Rees, The White House, The Green, Llandaff, Cardiff. P. T. Jenkins, "Bryncoed," Woodville Road, Newport, Mon.	*R. J. Edwards, Leicester House, 21, Ely Road, Llandaff, Cardiff. *M. Hughes, 27, Preston Avenue, Newport, Mon. *T. B. Bassett, 50, Heathfield Road, The Heath, Cardiff. *H. G. Madley, "Grasmere," Chepstow Road, Newport, Mon. *Electrical :* R. Robinson, 44, The Parade, Barry, Glam. (see also Divisions 7 & 8).	*J. R. Jenkins, "Nythfa," Newport Road, Bassaleg, Mon. R. J. Bennett, Arosfa, Keswick Avenue, Roath Park, Cardiff. W. E. Thomas, 24, Kenilworth Road, Newport, Mon. E. A. Owen, 20, Canada Road, Cardiff.		T. L. Evans, 1, Kelvin Road, Cardiff. D. R. Thomas (see also Division 7).
7	**Swansea Division,** comprising the Counties of Carmarthen, Pembroke and part of the Counties of Glamorgan and Brecon (namely, so much of these Counties as is not included in No. 6 Division).	T. Ashley, Dryslwyn House, De la Beche Street, Swansea. (Mines Inspector, Swansea.) (Swansea 2367.) *Private address :* Moorside, The Mayals, Blackpill, Swansea. (Mumbles 6451.)	*R. Yates, D.S.O., M.C. (Acting), "Mataura," Queen's Road, Sketty, Swansea.	W. J. Owen, "Ochiltree," Cowbridge Road, Bridgend. *T. Waldin, "Trewennol," Cimla Road, Neath. *H. J. Finney, B.Sc., 9 Pantygwydr Road, Uplands, Swansea. *Electrical :* R. Robinson (see also Division 6).	E. Griffiths, Twynyboli, Garnant, Carm. *J. Hughes, 6, Grange Street, Port Talbot. *J. R. Bowen, Dulais, Heolgam, Bridgend, Glam.		D. R. Thomas, 24, Dunraven Road, Sketty, Swansea (see also Division 6).
8	**Midland and Southern Division,** comprising so much of the County of Stafford as is not included in the North Western Division, Bedford, Berks, Buckingham, Cambridge, Cornwall, Devon, Dorset, Essex, Gloucester, except that part West of the River Severn, Hants, Hereford, Hertford, Kent, London, Middlesex, Norfolk, Salop, Somerset, Suffolk, Surrey, Sussex, Warwick, Wilts and Worcester.	W. E. T. Hartley, Empire House, Great Charles Street, Birmingham, 3. (Mines Inspector, Birmingham.) (Central 6016.) *Private address :* 11, Manor Road, Edgbaston, Birmingham. (Edgbaston 3328.)	*E. Rowley, 14, Duchess Road, Edgbaston, Birmingham, 16.	*T. D. Davies, 639, Walsall Road, Great Barr, Birmingham. F. N. Siddall, 82, Newbridge Hill, Bath. *Met. Mines and Quarries :* R. King, 11, Victoria Road, St. Austell, Cornwall. *Electrical :* R. Robinson (see also Division 6).	H. Morgan, 33, Mount Rd., Wolverhampton. S. Thomas, "Euroclydon," Weddington Road, Nuneaton. *W. Price, 26, Sir John's Road, Selly Park, Birmingham.	T. R. Rees, 185, Holly Road, Handsworth, Birmingham, 20. W. Morrow, 16, Heath Road, Harrow-on-the-Hill, Middlesex.	J. Evans, 467, Belchers Lane, Little Bromwich, Birmingham, 9. (see also Division 5).

* Trained in the use of Rescue Apparatus.

† Including the Parishes of Aberdare, Rhondda, Llantrisant, Coychurch Higher, Pencoed, Coychurch Lower, Llan-Gan, Colwinston, Llandow, St. Donats, Llyswen, Llandefalle, Llanfilo, Llan-y-wern, Llanhamlach, Llanfrynach, Cantref, Penderyn and all Parishes to the East thereof.

TWENTY-SEVENTH ANNUAL REPORT OF H.M. CHIEF INSPECTOR OF MINES.

MINES DEPARTMENT,
DEAN STANLEY STREET,
MILLBANK, LONDON, S.W.1.

Ernest Brown, Esq., M.C., M.P.,
Secretary for Mines. *24th May*, 1935.

Sir,

In accordance with the requirements of Section 100 of the Coal Mines Act, 1911, I have the honour to submit the following Report for the year 1934 in regard to mines under that Act. My Report under the Metalliferous Mines Regulation Acts and the Quarries Act will be submitted and published separately.

INSPECTION DIVISIONS AND INSPECTORATE.

There has been no alteration in the Inspection Divisions, of which a complete list is given on pages 72 to 74, together with the names and addresses of the Inspectors appointed to each Division.

I regret to record the death of Mr. D. Morris, Inspector of Horses in Mines in the Yorkshire Division. There were no other changes in the staff during the year.

During the year there were in Great Britain, 2,123 mines working under the Coal Mines Act. The total number of inspections made at these mines, inclusive of inspections made by the Inspectors of Horses, was 23,167 of which 17,566 were made underground. One thousand three hundred and one mines were inspected throughout, that is, in every part.

As in former years, several of the Inspectors read papers or gave lectures in addition to carrying out their work of inspection. A list of the papers read and of the lectures given will be found in Appendix I.

PERSONS EMPLOYED AND ACCIDENTS.

At Mines under the Coal Mines Act, 1911 (mines of coal, stratified ironstone, shale and fireclay) 173,262 persons were, on the average, employed at the surface, and 624,437 persons underground. The number of persons killed by accidents at these mines in 1934 was 1,073 and the number injured 132,859. The figures of injured include all cases where there was disablement for more than three days.

The following table shows the number of persons killed and injured by serious accidents per 100,000 manshifts worked *under-*

ground at mines under the Coal Mines Act, from various causes in each of the Mines Inspection Divisions during 1934 :—

Division.	Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Underground Haulage.	Miscellaneous Underground.	Total Underground.		
						1934	*1933*	*1932*
1. Scotland ..	0·24	1·18	0·14	0·45	0·76	2·77	*2·36*	*2·73*
2. Northern ..	0·04	0·97	0·17	0·62	0·50	2·30	*2·13*	*2·13*
3. Yorkshire ..	0·05	1·06	0·03	0·60	0·27	2·01	*2·25*	*2·15*
4. North Midland	0·24	1·72	0·06	0·61	0·42	3·05	*2·68*	*2·63*
5. North Western	1·56	1·15	0·06	0·50	0·35	3·62	*2·27*	*2·51*
6. Cardiff and Forest of Dean ..	0·01	1·41	0·03	0·45	0·49	2·39	*2·43*	*2·56*
7. Swansea ..	0·06	1·23	—	0·97	0·29	2·55	*2·44*	*3·14*
8. Midland and Southern ..	0·01	1·11	0·04	0·65	0·50	2·31	*2·39*	*2·48*
All Divisions ..	0·25	1·20	0·08	0·58	0·46	2·57	*2·34*	*2·46*

By serious accidents is meant those which, because of their nature, are required to be reported to H.M. Divisional Inspectors of Mines at the time of their occurrence. They include (*a*) accidents causing fracture of the head or limbs, or dislocation of limbs or any other serious personal injury and (*b*) accidents caused by explosion of gas or dust, or any explosive, or by electricity or by overwinding, *and causing any personal injury whatever.*

In addition to these immediately reportable accidents, a Return for each mine of all compensable accidents, namely, those which prevent a workman from following his employment for more than three days, is required to be forwarded to H.M. Divisional Inspectors of Mines on or before 21st January each year. The statistics covering these " three-day " accidents, however, take some time to classify, and this year the Reports of the Divisional Inspectors have been issued without waiting for them. This omission made it possible to publish these Reports in May, and the statistics of " three-day " accidents are published now in Appendix II.

The accident rates per thousand persons employed *above* and *below* ground at mines under the Coal Mines Act for the whole country in 1932, 1933 and 1934 were :—

	1934.	1933.	1932.
Killed	1·35	1·03	1·06
Killed and seriously injured ..	5·38	4·70	4·95

The accident rates per 100,000 man-shifts worked *above* and *below* ground at mines under the Coal Mines Act for the whole country were : -

	1934.	1933.	1932.
Killed	0·53	0·43	0·45
Killed and seriously injured ..	2·13	1·95	2·07

ACCIDENTS

Explosions

Forty-seven accidents by explosions of firedamp occurred during the year. In 11 of them 295 persons were killed and 43 injured, and 1 other person died during the year from injuries received in an explosion which occurred in 1933. In the remaining 36 explosions no person was killed, but 56 persons were injured. All persons injured by explosions, no matter how slightly, are included in these figures.

On Saturday, 22nd September, an explosion occurred at Gresford Colliery, Denbighshire, and resulted in the death of 265 persons. This was the greatest disaster which had overtaken the British coal mining industry since that at Senghenydd Colliery, Glamorganshire, on 14th October, 1913, when 439 lives were lost. You directed that a formal investigation be made into the causes and circumstances of this accident and such investigation was begun at Wrexham on 25th October and is still in being.

The cause of these explosions and the result were as shown in following Table :—

Cause.	No. of Fatal Accidents.	No. of Deaths.	No. of Non-fatal Accidents.	No. of Persons Injured.*
Lighting :—				
Naked Lights	3	9	28	40
Safety Lamps :—				
In Defective Condition ...	—	—	1	1
Shotfiring	2	12†	2	18
Electricity	3	6	3	14
Spontaneous Combustion ...	—	—	—	—
Matches or Smoking ...	1	1	2	7
Miscellaneous or Unknown	2	268	—	19
Total in 1934 ...	11	296†	36	99
Total in 1933 ...	*8*	*35*	*33*	*73*

* Including persons injured by explosions which proved fatal to others.
† Including one person who was injured in 1933 and died in 1934.

By your direction special Reports were written during the year (*a*) by Mr. E. H. Frazer, O.B.E., on the explosion at Polmaise Nos. 3 and 4 Colliery, Stirlingshire, on 3rd February (Cmd. 4617) and (*b*) by Mr. J. R. Felton, O.B.E., on the explosion at Bilsthorpe Colliery, Nottinghamshire, on 26th July (Cmd. 4780).

The other explosions are dealt with by the Inspectors in charge of the Divisions in which the explosions occurred; of the ten due to shotfiring by permitted explosives, five occurred in the Yorkshire Division, three in the North Western Division, one in the North Midland Division and one in the Swansea Division. In six of these explosions no one was injured. In four instances sand-clay stemming was used; none of the explosives in these cases was of the sheathed type.

Thirty-eight million, seven hundred and forty-two thousand shots, charged with 271,524,000 ozs. of permitted explosives, were fired during the year.

Coal Dust.

During the year 5,207 samples of the dust on the underground roadways were taken by the Inspectors in the several Divisions. Ten per cent. of these samples were found on analysis to contain less than 50 per cent. of incombustible matter. As was the case in 1933, the highest percentage of samples not in compliance with the General Regulations was in the Yorkshire Division, namely 20; and the lowest, namely 5, in the Midland and Southern Division. Mr. Humphrys in his Report in regard to the samples taken in the mines in Yorkshire remarks :—

> " This is a high proportion, but it is only fair to mention that Inspectors have instructions only to take samples where the conditions are such that adverse samples are likely to be obtained. Action followed as regards all the adverse samples."

This may be, but the obvious comment is that it should not be possible for the Inspectors to find such places.

Falls of Ground

During 1934, 442 persons were killed by falls of ground and 1,376 persons were reported to the Divisional Inspectors as having been seriously injured from the same cause. Compared with the year 1933, these figures show a decrease of 12 in the number killed and an increase of 57 in the number reported as seriously injured. The total number of persons disabled for more than three days, including the cases of serious injury reported to the Divisional Inspectors, was 47,286, an increase of 3,218 compared with the figure for 1933.

The table below shows the number of persons killed and seriously injured per 100,000 man-shifts worked underground from falls occurring at the face and on roads in the several Inspection Divisions,

also the total rate from this cause for Great Britain in 1932, 1933 and 1934.

Division.	At the face.		On Roads.				Total: Persons killed and seriously injured.			
			Whilst repairing or enlarging.		Whilst otherwise working or passing.					
	No. of Persons killed and seriously injured.	Rate per 100,000 man-shifts worked below-ground.	No. of Persons killed and seriously injured.	Rate per 100,000 man-shifts worked below-ground.	No. of Persons killed and seriously injured.	Rate per 100,000 man-shifts worked below ground.	No. in 1934.	Rate per 100,000 man shifts worked below-ground		
								1934.	*1933.*	*1932.*
1. Scotland ..	192	0·98	15	0·08	23	0·12	230	1·18	*1·18*	*1·16*
2. Northern ..	239	0·72	22	0·07	58	0·18	319	0·97	*0·92*	*1·00*
3. Yorkshire ..	183	0·76	44	0·19	26	0·11	253	1·06	*1·29*	*1·12*
4. N. Midland	238	1·43	27	0·16	22	0·13	287	1·72	*1·63*	*1·55*
5. N. Western	167	0·96	15	0·08	19	0·11	201	1·15	*1·21*	*1·12*
6. Cardiff and Forest of Dean ..	203	1·02	36	0·18	41	0·21	280	1·41	*1·42*	*1·33*
7. Swansea ..	96	0·93	17	0·16	14	0·14	127	1·23	*1·16*	*1·64*
8. Midland and Southern	101	0·93	15	0·14	5	0·04	121	1·11	*1·06*	*1·16*
Total in 1934	1,419	0·93	191	0·13	208	0·14	1,818	1·20	—	—
Total in 1933	*1,393*	*0·96*	*210*	*0·14*	*170*	*0·12*	*1,773*	—	*1·22*	—
Total in 1932	*1,449*	*0·97*	*196*	*0·13*	*179*	*0·12*	*1,824*	—	—	*1·22*

Compared with 1933, the total death-rate from falls per 100,000 man-shifts worked underground is down by 0·02 from 0·31 to 0·29 and the killed and seriously injured rate is down by the same amount—from 1·22 to 1·20.

As stated in previous Reports, the way to prevent many of the accidents from falls at the face is to leave a minimum area of roof exposed as has to be done where the roof is bad. This can be effected as suggested in my Report for 1933 by a system of support which includes the setting of straps not only at right angles, but also parallel to the face as was illustrated in Mr. E. H. Frazer's Report for the Yorkshire Division for 1930. Mr. J. M. Carey in his Report for the Cardiff and Forest of Dean Division for 1934 states that he is attempting to get this system adopted but that, although many people are agreed upon the principle, unfortunately he has, so far, received little encouragement.

Of the fatal accidents caused by falls during 1934, 75 per cent. occurred at the working face and 25 per cent. on roads.

Shaft Accidents

Sixteen deaths were caused by fifteen accidents in connection with the working of shafts during the year. This is the lowest number of deaths in any year since records have been kept, but as will be seen from the short descriptions following, it could have been

much less if a little more care and restraint had been exercised by the persons who were killed.

One man fell out of an ascending cage because one of the end gates had not been shut by the onsetter. Two men pushed tubs into shafts at mid-landings when the cage was not there to receive them : in all such cases, which occur year after year, the man follows the tub and is killed. A shaftman fell off a cage when he was cleaning out a water-garland; although safety-belts were provided, their use was not enforced nor were they used. One youth was killed when illegally riding in a skeleton cage in a staple pit; a piece of stone fell from the side and struck him. Two men were killed by cages descending upon them when they were crossing from one side of the shaft to the other, and an onsetter was killed in a similar manner when he was on the sump beams nailing down one of the landing beams. Two onsetters were caught when adjusting tubs in cages which they had signalled away. One youth slipped on the wet floor of an inset into a cage which was being raised; he was carried some distance up the shaft and then fell into the sump. A banksman was pushed into a shaft by tubs which he had freed and then attempted to stop, and an onsetter was killed when he was about to push two empty tubs out of a cage which was still in motion; his neck was broken by the hoop of the middle deck of the descending cage.

There were two overwinding accidents which had fatal results, one in Scotland and one in Yorkshire, three persons being killed and seventeen injured. In neither case was the overwind prevention gear satisfactory. At Murton Colliery, Durham, an overwinding accident occurred in which 42 persons in the descending and five in the ascending cage were injured more or less seriously. The winding arrangements were of the Koepe type—the sole example of that system in use in this country—and the overwind was due to the winding rope slipping on the driving pulley, the rope having been wetted by water escaping from a garland in the shaft.

There were no accidents due to breakages of winding ropes whilst persons were being raised or lowered, but eight ropes broke when winding minerals—a reminder of the vigilance which is always necessary.

The Overwind Prevention Committee, under the Chairmanship of Mr. F. H. Wynne, C.B.E., B.Sc., Deputy Chief Inspector of Mines, having completed its labours and made a Report,* it may be that in future years, if the recommendations made are carried out, there will be no overwinding accidents to record. At the same time it is but just to mention the great credit which is due to those who design, handle and maintain the winding gear in use.

* Report of the Overwind Prevention Committee. Price 9*d.* net.

Underground Haulage Accidents

The following table shows the accidents due to haulage operations underground :—

—	Fatal and Non-fatal Accidents reported to Inspectors.						All Non-fatal Accidents disabling for more than 3 days in 1934.*	
	No. of Separate Accidents.			No. of Persons Killed and Seriously Injured.			No. of Separate Accidents.	No. of Persons Injured.
	1934.	*1933.*	*1932.*	1934.	*1933.*	*1932.*		
While engaged in haulage operations	668	*659*	*717*	677	*663*	*723*	33,668	33,733
While walking inbye or outbye to or from their work..	61	*57*	*87*	62	*58*	*93*		
Miscellaneous ..	141	*152*	*181*	147	*153*	*184*		
Total	870	*868*	*985*	886	*874*	*1,000*	33,668	33,733

* The corresponding figures for 1932 were 34,553 accidents and 34,595 persons injured, and for 1933, 32,165 accidents and 32,216 persons injured.

The annual average death rate for haulage accidents per 1,000 persons employed underground has varied very little since records have been kept. That rate during the decade of 1873–1882 was 0·32; during the next five decades it was 0·33, 0·29, 0·30, 0·29 and 0·29 respectively. In 1933 and 1934 it was 0·25.

In previous Reports I have said that haulage accidents were in the main due to the conditions in which haulage operations were carried on and a review of the accidents which occurred during 1934 confirms that conclusion. It is a point of view maintained by the Divisional Inspectors in their Reports; for example, Mr. Davies (Northern Division) states in his Report :—

> " The necessity for improving the conditions upon haulage roads, which I stressed last year, is evidenced again by the number of accidents due to derailments and to insufficient clearance."

Mr. Humphrys (Yorkshire Division), in reference to fatal accidents on main haulages, remarks in his Report :—

> " . . . the conditions under which work was carried on could have been definitely improved in seven instances . . . ."

and in reference to such accidents on auxiliary haulages :—

> " The conditions under which work was carried on in auxiliary haulage roads, where fatal accidents occurred, could have been improved in many cases."

Mr. Felton (North Midland Division) points to the direction from which improvement will come, when he states in his Report as follows :—

> " The fact that under modern mining methods fewer roads are required, and in these considerable outputs have to be handled expeditiously, makes it imperative to construct haulage roads of larger dimensions than formerly and to maintain them in good condition. This, in conjunction with the more efficient lighting which the Regulations call for, must have a beneficial effect as regards haulage accidents, provided always that proper attention is given to the installation and use of safety devices, particularly in the vicinity of loading points and junctions where haulage workers are concentrated."

To this I would add, not only should the haulage roads be roomy but they should also be provided with well laid and well maintained tracks, and I may repeat what appeared in my Report for 1933, that, whilst it is the duty of the management to provide stop-blocks and other apparatus designed to prevent accidents and to maintain these appliances in working order, it is equally the duty of the workmen to use them.

Miscellaneous Underground Accidents

Eighty-nine persons were killed and 602 were reported to the Divisional Inspectors as having been injured from various miscellaneous causes during the year. These causes were :—

(*a*) *Explosives.*—Eleven persons were killed and 195 injured by accidents connected with the use of explosives as shown in the Table below :

Character or Cause.	No. of Fatal Accidents.	No. of Persons Killed.	Non-fatal Accidents.	
			No. of Separate Accidents.	No. of Persons Injured.
While conveying explosives	—	—	3	3
While handling explosives	1	1	12	19
While charging or stemming—				
From sparks of match, lamp, or candle	—	—	5	6
Premature explosions—				
With squibs or straws	—	—	3	3
With safety fuse	1	1	—	—
With electric fuse	—	—	2	2
Delayed explosions	—	—	3	3
Unramming shots which had missed fire	—	—	4	4
While boring or working near unexploded remnants left by incomplete detonation of the charge	—	—	6	7
Blows from stones or coal projected by shots when persons had not taken sufficient shelter	6	6	104	111
Sundries and unknown	3	3	32	37
Total in 1934	11	11	174	195
Total in 1933	*14*	*15*	*129*	*138*

The annual average during the past ten years is 18 deaths and 200 persons injured, but, as has been pointed out year by year, these figures would almost disappear were care and attention to the requirements of the Explosives in Coal Mines Order *always* exercised. Shotfirers, however, continue to consider that they have taken proper shelter from the shot they are about to fire if between them and that shot there is a tub or even only a brattice sheet. And men sent to prevent anyone approaching a shot which is about to be fired are found, after it has been fired, dead or injured close to it.

During the year 82 per cent. of the fatal and 74 per cent. of the non-fatal accidents occurred in the Scotland and Northern Divisions. Keener supervision, coupled with an anxiety to see that the requirements of the Explosives Order are strictly carried out, would be beneficial.

(*b*) *Suffocation by Natural Gases.*—Five persons were suffocated by natural gases during the year. In one case two overmen, after the air current had been reversed in a district which had been abandoned for over three years, attempted, contrary to instructions, to explore the return airway: they were overcome by blackdamp. They carried two flame safety lamps and two electric lamps. One of the flame lamps was found extinguished and hung up outside the district; the other, also extinguished, was found near the bodies, together with the two electric lamps which were still alight.

In another case, an undermanager, for an unknown reason, went past a fence and up a heading, known to contain firedamp, and was suffocated. He had a flame safety lamp.

The fourth case was that of a corporal who, when counting the tubs in each stall at the end of the shift and finding his way round the face blocked by a fall, crawled into the waste where there was an accumulation of firedamp. Being missed, he was found alive by a search party, but died shortly afterwards. The deputy of the district said he had told the corporal not to travel the way he did because of the fall, but he, the deputy, had not fenced off the road. Proceedings were taken against him for this offence and he was fined £20.

The remaining case was that of a byeworker. The deputy of the district had arranged with him that, after he had done certain work, he would accompany him into a gateway in which work was temporarily stopped, to get some tools. Unfortunately, the byeworker did not observe this arrangement but went into the gateway by himself and was suffocated by firedamp. He had with him only an electric lamp. The gateway had not been inspected for three days and was not fenced off. Proceedings were taken against the undermanager and the day and night deputies. The undermanager was fined £15; the day deputy £5 8*s*.; and the night deputy £2 14*s*.

(*c*) *Underground Fires.*—Six persons lost their lives in three underground fires. In one case three men were suffocated by fumes

from a fire on a conveyor face caused by a short circuit in a flexible electric cable. The other men on the face came out, but these three refused to do so and took shelter in a newly-formed dummy road from which there was no second means of egress. Apparently they thought the fire was of little moment, but it gained ground and they were overcome when attempting to escape. Their bodies were recovered by men wearing rescue apparatus.

A putter was killed in a small bord and wall district which had only one means of ingress and egress. The ventilation was coursed by means of brattice cloth which was set on fire by a naked light. Six persons on the inbye side of the fire were brought out by a rescue brigade, four of them being unconscious; three recovered, but efforts to resuscitate the putter were unavailing.

In the third case two men were suffocated. This fire was due to a short circuit in a switchbox placed close to the side of a main intake airway. The fire spread with great rapidity and smoke fouled both the intake and return airways so that the two men who were working at the far end of the district were unable to escape.

(*d*) *Irruptions of Water.*—One man was drowned owing to the overflow of a burn finding its way into the dip workings of a mine by scouring out the filling of an old shaft and thence by way of old workings. The existence of the old shaft was unknown and no plans could be found which might have given a warning.

(*e*) *Electricity.*—During the year there were 8 accidents involving the loss of 8 lives due to electric shock. Five of these accidents were connected with the use of trailing cables. These and the remaining cases are all dealt with in detail by Mr. J. A. B. Horsley, Electrical Inspector of Mines, in his Report.

(*f*) *Machinery.*—Seventeen persons were killed and 85 seriously injured by accidents in connection with the use of machinery underground during the year. Nine of the fatal accidents occurred in connection with coal cutters, and seven in connection with conveyors. Of these, 12 were due to the persons concerned behaving without reasonable care and not to any fault of the machinery. The remaining fatal case occurred after a plank forming part of the covering over a horizontal haulage wheel had been broken by a man slipping and falling on it; he removed the plank and then inadvertently stepped into the space left and became entangled in the revolving wheel.

(*g*) *Other Accidents.*—Accidents of a miscellaneous character are included under this heading. Forty-one persons lost their lives and 272 were seriously injured. Eighteen of the fatal accidents were due to slight injuries involving abrasions of the skin; ten of these were considered so trivial by the persons injured that they did not seek first-aid treatment. One of these persons was a trained first-aid man.

Surface Accidents

Seventy-four persons were killed and 298 seriously injured by accidents at the surface of mines during the year. Of the fatal accidents, 18 were in connection with machinery; 34 occurred on railways, sidings, or tramways; 2 in connection with the use of electricity; 1 was due to the explosion of a cast-iron distance piece between the throttle valve and steam chest of a vertical air-compressor; and 19 to various miscellaneous causes.

Ten of the accidents from machinery occurred in connection with revolving shafts. It is true that in some cases men were oiling the bearing of shafts in motion and that notices prohibiting that practice were posted. Notices, however, are not enough. Men are zealous in their work and this causes them to take risks. All machinery should be thoroughly guarded; post and rail fences are not enough to prevent accidents. Projecting keys and studs in collars cause accidents year by year, for which there is no excuse, for the danger attaching to such things is well known. The lessons to be learnt from the illustrated pamphlet* issued by the Department some years ago seem to have been forgotten.

Examination of the details of the accidents which occurred on railways and tramways shows that, whilst some were purely accidental, a great many of them could have been avoided by the exercise of a little more care on the part of those involved. Alertness, coupled with the principles of " Safety First " seems to be the best remedy against these accidents.

Of the 19 deaths from miscellaneous causes, 6 followed slight injuries which resulted in blood poisoning; in 4 of these cases no first-aid treatment was given.

General

Inspections on behalf of Workmen

During the year 3,387 inspections were made at 368 mines by persons appointed by the workmen employed in those mines in exercise of their powers under Section 16 of the Coal Mines Act, 1911. Eighty-two per cent. of these inspections were made in the Northern and Cardiff and Forest of Dean Divisions, fifty-eight per cent. being in the former Division.

For very many years H.M. Inspectors in their annual reports have expressed the hope that more inspections would be made by the workmen. I think it would be beneficial if definite arrangements could be made whereby at every colliery two or more of the workmen employed therein would make an inspection at least once in every three months.

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* Safety First Pamphlet No. 5. Fencing and Other Safety Precautions for Machinery at Mines. Printed and published by H.M. Stationery Office. Price 6*d*. net.

It would also be beneficial if, in the ordinary course of their employment, the men working in each district of a colliery were to travel once at least in every month from their working places to the surface by each of the means of egress required to be provided by Section 36 (3) of the Act.

Fighting Underground Fires

A great deal has been written recently as to the character of the fire-fighting equipment which should be provided underground, and there seems to be a fairly wide measure of agreement that it should include: (i) water from mains or in movable tanks and preferably both; (ii) chemical extinguishers; (iii) sand and/or stone-dust; all these things to be disposed through the pit so that they can be brought into action as quickly as possible. The extent and the layout of this equipment must necessarily vary in different conditions, and there is room for different methods and different opinions about some of the many details involved.

Another side of the question which does not seem to have been so fully considered is that of the organisation to be set up to ensure that equipment is kept in good order and constant readiness, and that properly trained personnel will make speedy and good use of it. In this connection might well be studied the possibilities of co-operative action by developing and extending to fire fighting the activities of the Rescue Stations.

Treatment of Burns

In the Report* which was published in 1933 on the "Medical Treatment of Men Burned in Colliery Explosions," stress was laid upon the efficacy of tannic acid solution for dealing with shock which is such a dangerous sequel to an extensive burn. During 1934 the treatment by tannic acid solution was adopted at several hospitals to which persons burned in mining accidents had been removed and, through the courtesy of the House Surgeons, the Medical Inspector of Mines was able in several instances to visit the patients and to observe the effects of the treatment given them. These observations fully confirmed the excellence of the recommendations contained in the Report.

Protective Equipment

From Table 53 of Appendix A it will be seen that 9,597 persons suffered injury to their heads; 24,143 persons injury to their legs; 44,002 persons injury to their hands; 14,901 persons injury to their feet; and 6,541 persons injury to their eyes. The period of disablement of these persons is also shown—it varies from three days to 26 weeks or longer. These figures show how wide a field there is for the use of protective equipment.

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* Report on the Medical Treatment of Men Burned in Colliery Explosions, H.M. Stationery Office, 1933. Price 6*d*. net.

It is true that individuals here and there have been accustomed to wear hard hats, shin guards, gloves and goggles whilst at work, but until some four or five years ago there was no organised attempt to advertise the benefit to be derived from the use of such equipment. This fact, coupled with the knowledge that such equipment had proved of great value in the prevention of accidents and loss of work in the mines of the United States, led Mr. H. M. Hudspeth, D.S.O., M.C., M.Sc., Mining Engineer to the Safety in Mines Research Board, to take up the matter seriously in the various coalfields of this country. Mining people being of conservatives the most conservative, progress has been somewhat slow, but proofs of the value of the equipment are becoming frequent and its value in preventing accidents is becoming more fully realised.

As an instance of the value of hard hats in preventing head injuries the experience of a colliery in South Wales employing 600 men underground may be stated. During the first three months of 1934, when very few hard hats were being worn, there were 32 injuries to heads. During the first three months of 1935, when nearly all the underground men were wearing these hats, one head injury only has been reported and this to a man who was *not* wearing a hard hat.

There are now over 100,000 of these hats in use in the various coalfields and the use of the other forms of protective equipment—gloves, safety boots, and goggles—is extending steadily in the various Divisions with the exception of Swansea, in which Mr. Ashley regrets that he is not able to report any general enthusiasm on the subject; he is not without hope that this apathy will soon be overcome.

Sand-clay Stemming

In spite of the demonstrations of the value of sand-clay stemming given during 1933 in the various coalfields by Professor J. A. S. Ritson, D.S.O., M.C., and his assistant, Mr. H. Stafford, this material is not in such wide use as it should be.

Mr. Felton in his Report states that at one colliery the number of shots during four weeks was reduced by the use of sand-clay stemming from 4,293 to 3,731 and the charge per shot from 5·8 to 2·4 ounces.

Apart from any other consideration it might be thought that the economy to be derived from the use of sand-clay stemming, as shown by the above example, would have appealed to colliery managers. When safety and economy go together, and as a rule they do, it is difficult to understand why the industry does not avail itself of the results of research work carried out largely at its expense or of the willingness of Professor Ritson to advise as to the suitability for making stemming of any samples of sand and clay submitted to him.

The Edward Medal

During the year, His Majesty the King was graciously pleased to award the Edward Medal as follows :—

To Mr. D. H. O. Bishop, Colliery Manager, for his bravery in connection with an accident following a fall of roof at Langwith Colliery, Derbyshire.

I have the honour to be,
Sir,
Your obedient Servant,

HENRY WALKER.

APPENDIX I.

Papers Read or Lectures Given by H.M. Inspectors during the Year 1934

"Recent Mine Disasters and their Causes," by E. H. Frazer, O.B.E., M.Sc., Divisional Inspector, before firemen and officials of Wemyss Coal Company at Denbeath.

"Mine Ventilation," by H. T. Foster, B.Eng., Senior Inspector, before the Denbeath Officials' Club, Wellesley Colliery.

"Review of Accidents in Northern Division," by T. L. McBride, B.Sc., Senior Inspector, before the Armstrong College Mining Society.

"Care and Management of Ponies in Mines," by R. L. Layfield, M.B.E., Horse Inspector, before the County of Durham Mining Society.

"Accidents to Boys," by T. H. Stanton, M.C., Sub-Inspector, before boys attending "Safety Principles" Classes at Wombwell Centre.*

"Safety in Haulage Operations," by J. R. Felton, O.B.E., Divisional Inspector, before boys from (*a*) Nottinghamshire Mines, at Buxton Research Station; (*b*) Derbyshire Mines, at Buxton Research Station; (*c*) Derbyshire Mines at Chesterfield Technical College.*

"Some Safety Problems in Mining," by J. R. Felton, O.B.E., before Ilkeston (Bath Street) Men's Society.*

"Safety in Mines," by J. R. Felton, O.B.E., before boys from Leicestershire Mines, at Coalville Mining and Technical College.*

"Safety in Quarries," by J. Hall, Senior Inspector, before the Derbyshire Branch of the Institute of Quarrying at the Palace Hotel, Buxton.†

"Safety Principles in Mining," by J. Hall, before students of the Clown Technical and Mining College.

"Safety in Mines," by T. E. Pickering, Junior Inspector, before boys of Creswell Colliery.*

"Haulage Accidents, some suggestions on how to prevent them," by D. Coatesworth, Junior Inspector, before (*a*) Safety Badge winners at the Research Station, Buxton; (*b*) workmen of Altham Collieries, Accrington.‡

"Some Methods of Roof Support, where intensive mining is practised," by D. Coatesworth, before (*a*) Lancashire and Cheshire Undermanagers' Association, Accrington; (*b*) Lancashire and Cheshire Colliery Deputies' Association.

Presidential Address by W. J. Charlton, O.B.E., Divisional Inspector before the Manchester Geological and Mining Society.§

Presidential Address by J. M. Carey, O.B.E., Divisional Inspector, before the South Wales Institute of Engineers.¶

"Safer Mining," by R. J. Edwards, Junior Inspector, before the South Wales Branch of the National Association of Colliery Managers.‖

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* Local Press.
† "The Quarry Managers' Journal," issue of 5th March, 1934.
‡ "The Iron and Coal Trades Review," issues of 10th and 17th April, 1934.
§ Trans. Inst. Min. Eng. Vol. LXXXVIII, Part III.
¶ Proc. : S. Wales Inst. Eng. Vol. L, Part I.
‖ "The Iron and Coal Trades Review," issue of 2nd November, 1934.

" Safety in Mines," by H. G. Madley, Junior Inspector, before the Beynon Colliery Officials' Association.

" The Coal Mines Act and Regulations," by R. Yates, D.S.O., M.C., Senior Inspector, before officials and workmen residing at Blaengarw, near Bridgend.

" Accidents in Mines," by H. J. Finney, B.Sc., before the South Wales and Monmouthshire Branch of the National Association of Colliery Managers.*

" Some Notes on the Reports of the Secretary for Mines and of the Inspectors of Mines," by W. E. T. Hartley, Divisional Inspector, before the Students' Society at Birmingham University.

" Accidents from Falls of Roof and Side, their Causes and Suggestions for their Prevention," by E. Rowley, Senior Inspector, before (*a*) County Mining College, Cannock; (*b*) Mining College, Chasetown; (*c*) employees of Messrs. Mobberley and Perry, Lye, Stourbridge; (*d*) Nuneaton Mining School; (*e*) Victoria Hall, Radstock; (*f*) Cannock Chase Colliery employees at Chasetown Institution; (*g*) mining students, Aylsham, Kent; (*h*) Two Gates Mining School, Warwickshire; (*i*) Keresley Colliery Institute; (*j*) Lower Gornal Institute.

" Design and Testing of Flameproof Electrical Apparatus," by J. A. B. Horsley, O.B.E., Electrical Inspector, before the Mining Teachers' Conference, Sheffield.

" Electrical Signalling Systems and Telephones in Mines," by J. Cowan, Junior Electrical Inspector, before the Association of Mining Electrical Engineers at Hednesford.†

" Recent Developments in Mining Electrical Equipment," by J. Cowan, before (*a*) Leeds University Mining Society; (*b*) Yorkshire Colliery Undermanagers' Association at Wakefield.‡

" The Prevention of Silicosis," by S. W. Fisher, M.D., B.Ch., Medical Inspector, and P. S. Hay, O.B.E., Inspector for Special Duties, before members of the Cumberland Colliery Officials' Association.

" Ambulance Work in Mines," by S. W. Fisher, M.D., B.Ch., before the County of Durham Mining Society.

" Some Medical Aspects of Coal Mining," by S. W. Fisher, M.D., B.Ch., before (*a*) the Yorkshire Colliery Under-Managers' Association; (*b*) the Royal Technical College, Glasgow.

" Electric Shock," by S. W. Fisher, M.D., B.Ch., before the Association of Mining Electrical Engineers (Lothians Branch).

" The Prevention of Silicosis," by P. S. Hay, O.B.E., before members of the South Wales Miners' Federation at (*a*) Trimsaran, (*b*) Cross Hands, and (*c*) Pontyberem.

" The Prevention of Silicosis," by P. S. Hay, O.B.E., before colliery agents, managers, officials, mining teachers, and students at the Treforest School of Mines.§

" Silicosis," by P. S. Hay, O.B.E., before the Ffaldau Workmen's Literary Institute.

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* " The Iron and Coal Trades Review," issue of 14th December, 1934; " The Colliery Guardian," issue of 14th December, 1934.

† Journal of the Association of Mining Electrical Engineers, Vol. XIV, No. 163.

‡ Journal of the Association of Mining Electrical Engineers, Vol. XIV, No. 165.

§ " Crushing-Grinding-Mining-Quarrying Journal," Vol. II, No. XI.

APPENDIX II.

Divisional Summary of Non-Fatal Accidents disabling the Person injured for more than 3 days occurring at Mines under the Coal Mines Act during the Year 1934.

Place or Cause of Accident.	Inspection Division. Scotland.	Northern.	Yorkshire.	North Midland.	North Western.	Cardiff and Forest of Dean.	Swansea.	Midland and Southern.	Total.
	Number of Separate Accidents.								
Total	13,626	26,828	23,038	17,881	15,362	16,957	9,456	9,252	132,400
	Number of Persons injured who were disabled for more than 3 days.								
Underground:									
Explosions of Firedamp or Coal Dust	32	10	10	31	2	2	5	1	93
Falls of ground	4,363	8,155	8,135	6,928	5,242	7,520	3,810	3,133	47,286
Shaft Accidents	54	82	25	23	23	21	5	14	247
Underground Haulage Accidents	3,052	9,569	6,462	3,738	3,564	3,038	2,125	2,185	33,733
Miscellaneous Underground Accidents	4,925	6,795	6,822	6,064	5,287	5,435	2,726	3,179	41,233
Total Underground ..	12,426	24,611	21,454	16,784	14,118	16,016	8,671	8,512	122,592
On Surface:									
On railways, sidings or tramways	441	788	458	318	363	300	277	208	3,153
Elsewhere	835	1,514	1,189	897	917	680	531	551	7,114
Total on Surface ..	1,276	2,302	1,647	1,215	1,280	980	808	759	10,267
Grand Total 1934	13,702	26,913	23,101	17,999	15,398	16,996	9,479	9,271	132,859
1933	*12,599*	*23,710*	*21,726*	*17,225*	*14,045*	*15,759*	*8,786*	*8,569*	*122,419*
1932	*12,585*	*23,808*	*22,902*	*17,930*	*14,362*	*17,151*	*8,270*	*8,866*	*125,874*
	Rate per 100,000 man-shifts worked.*								
Underground:									
Explosions of Firedamp or Coal Dust	0·16	0·03	0·04	0·19	0·01	0·01	0·05	0·01	0·06
Falls of ground	22·31	24·71	33·87	41·53	30·08	37·77	36·72	28·83	31·14
Shaft accidents	0·28	0·25	0·10	0·14	0·13	0·10	0·05	0·13	0·16
Underground Haulage Accidents	15·61	28·99	26·91	22·41	20·45	15·26	20·48	20·10	22·22
Miscellaneous Underground Accidents	25·18	20·59	28·40	36·35	30·34	27·30	26·28	29·25	27·16
Total Underground ..	63·54	74·57	89·32	100·62	81·01	80·44	83·58	78·32	80·74
On Surface:									
On railways, sidings or tramways	6·58	7·58	5·59	5·39	5·24	6·89	10·02	5·18	6·40
Elsewhere	12·46	14·56	14·52	15·20	13·25	15·63	19·22	13·72	14·45
Total on Surface ..	19·04	22·14	20·11	20·59	18·49	22·52	29·24	18·90	20·85
Grand Total 1934	52·18	62·01	71·72	79·71	63·24	70·05	72·15	62·29	66·08
1933	*50·61*	*60·33*	*70·22*	*77·84*	*58·82*	*65·77*	*67·88*	*60·35*	*63·68*
1932	*50·32*	*60·60*	*69·85*	*75·88*	*58·31*	*68·27*	*66·26*	*60·37*	*63·69*
	Estimated Number of man-shifts actually worked in 1934. (Thousands)								
Below ground	19,557	33,004	24,018	16,680	17,426	19,910	10,374	10,868	151,837
Above ground	6,701	10,395	8,190	5,900	6,921	4,351	2,763	4,015	49,236

* The rates for underground accidents are based upon the number of shifts so worked, and those for surface accidents upon the number of shifts worked above ground.

Note.—The particulars of accidents above are complementary to those shown in Table 5 of the Reports of H.M. Inspectors of Mines under the Coal Mines Act, 1911, for the year 1934, which are published separately for each Division. Certain classes of non-fatal accidents are reported at the time of their occurrence to H.M. Inspectors of Mines most of which involve disablement for more than 3 days and are included above.

REPORT OF THE PETROLEUM DEPARTMENT.

A brief reference was made on page 83 of the Annual Report for 1933 to the Petroleum (Production) Act, which received the Royal Assent on 12th July, 1934, and the reason which led the Government to promote fresh legislation. While the indications of renewed interest which were referred to were welcome, it was clear that there were a number of difficulties in securing a proper search for oil under existing legislation, viz., the Petroleum (Production) Act 1918. That Act was limited in scope and virtually set out to do no more than prevent the indiscriminate development of oil, such as had taken place in some countries, by providing that anyone who wished to search for and develop oil in this country should be required to obtain a licence from the Government. It was admitted by the Government of the day that this was only a stop-gap arrangement and that several important and controversial questions were left to be dealt with in more normal times.

In its review of the position, the Government came to the conclusion that if a search for oil on a considerable scale in this country was to be secured, and if results were to be obtained within a reasonable period of years, there were three main requisites. The first of these was the grant of exclusive rights over reasonably large areas. The second was the provision of machinery through which it would be possible to obtain facilities to enable necessary operations to be carried on, where these could not be secured by voluntary means; and the third was a clear determination of the position in regard to the property in oil.

In theory, the Act of 1918 gave the power to grant exclusive rights over unlimited areas to permit of the search for and the development of petroleum, if found. But when the Act was passed, it was realised that a position of great difficulty would arise if a licensee who had been granted rights over a large area found oil. In the administration of the Act various attempts had been made to counter these difficulties. The first licences granted under the Act contained conditions which preserved to the Government the right to deal with the question of royalties. Later, licences were restricted to areas over which the licensees actually held rights of access. This, however, was found in practice to be too restrictive and more recently licences in respect of areas of a few square miles in extent were granted, provided the licensee held or had acquired rights of access over a part of the area. No attempt was made in the Act of 1918 to deal with the other main requisites referred to and indeed, these were the matters which the Government of 1918 felt ought to be settled when the abnormal conditions then existing had passed away.

It was clear both from the small number of applications for licences received and the insignificant amount of work done under

the licences which were granted that the Act of 1918 had proved to be quite ineffective in promoting a search for oil on a large scale.

Petroleum (Production) Act, 1934

In the Act of 1934 there are provisions which enable all three of the main requisites to be met. The doubts which existed as to the ownership in petroleum are settled by providing that the property in any oil which may exist in this country shall be vested in the Crown—thus making it practicable to meet two of the main points—the grant of licences over sufficiently large areas and the removal of the difficulties which any other arrangement would have involved in regard to claims for payment of royalties. The remaining point is met by applying to petroleum working the provisions of an Act passed since the Petroleum (Production) Act, 1918, became law, viz., the Mines (Working Facilities and Support) Act, 1923, under which the Railway and Canal Commission, which is presided over by a Judge of the High Court, is enabled to grant necessary ancillary rights when it is satisfied that these rights cannot be obtained on reasonable terms by voluntary arrangements, and that it is in the national interest to grant the rights applied for.

The following is a summary of the principal provisions of the Act :—

The property in petroleum existing in its natural condition in strata in Great Britain is vested in the Crown, which has the exclusive right of searching and boring for and getting petroleum. (Any petroleum obtained from three small areas covered by licences previously granted under the Petroleum (Production) Act, 1918, which were in force at the time when the Act of 1934 was passed, is exempted from this provision of the Act so long as the licences remain in force.)

The Board of Trade has power to grant to such persons as they think fit licences to search for and get petroleum for such consideration (whether by way of royalty or otherwise) as the Board of Trade, with the consent of the Treasury, may determine and upon such other terms and conditions as the Board think fit. The Act provides that the powers and duties of the Board of Trade shall be exercised through the Secretary for Mines.

The grant of a licence does not confer on the licensee any right which he does not enjoy apart from the Act to enter on or interfere with land. If, however, the licensee is unable to secure rights of access by private arrangement with the landowners concerned, for the purpose of carrying out necessary operations, he is entitled, under Section 3 of the Act, to make application to the Railway and Canal Commission for the grant of ancillary rights under the provisions of the Mines (Working Facilities and Support) Act, 1923, already referred to. In addition to the considerations to which the Commission is required to have regard under the Act of 1923,

the new Act provides that the Commission shall, in deciding whether to grant any right applied for, have regard to the effect on the amenities of the locality; and, in determining the amount of any compensation to be paid for the grant of any right, make an additional allowance of not less than ten per cent. on account of the acquisition of the right being compulsory.

Section 6 of the Act provides for the making of regulations governing the conditions under which licences may be granted.* They prescribe (*a*) the manner in which, and the persons by whom, applications for licences may be made, (*b*) the fees to be paid on application, (*c*) the conditions as to the size and shape of areas, and (*d*) model clauses for incorporation in licences, subject to such modifications and exclusions as the Board of Trade think fit in any particular case.

As soon as any licence is granted, notice is to be published in the " London Gazette " and, in the case of Scotland also in the " Edinburgh Gazette," stating the name of the licensee, and the situation of the area in respect of which the licence has been granted.

Regulations and Model Clauses

Two forms of licence are provided for in the Regulations, (*a*) a prospecting licence, which normally will be granted for a period of three years, with the possibility of two extensions of one year each; and (*b*) a mining licence, which may be granted for a period not exceeding 50 years, with the possibility of an extension for a further period not exceeding 25 years.†

Under the prospecting licence, licensees will be required to undertake a programme of work consisting of a geological or geophysical survey and/or drilling to be agreed with the Secretary for Mines with the object of testing the possibilities of the licensed area. The mining licence will cover the period of development.

It is the intention to entertain applications for a *mining* licence only in respect of

(*a*) an area which has previously been included either in a prospecting licence granted under the Act to the applicant or in a mining licence granted to a former licensee, or

(*b*) an additional area adjoining that already held under mining licence by the applicant.

Any person may apply for a licence, but before a licence is granted applicants will be required to satisfy the Secretary for Mines that they are financially and technically qualified. In the case of foreigners and companies incorporated outside Great Britain or Northern Ireland, it is a condition that an operating company must

* The Regulations were made by the Secretary for Mines and presented to Parliament on 15th May, 1935, and came into force on 17th June.

† Copies of the prescribed application form, with Notes for the use of applicants, may be obtained from the Petroleum Department, Cromwell House, Dean Stanley Street, London, S.W.1.

be formed and registered in this country for the purpose of receiving the grant of, and carrying out the obligations imposed under, the licence.

The fees payable on application are £20 for a prospecting licence, and £40 for a mining licence, but in the event of an application being refused one-half of the fee paid will be refunded to the applicant.

With his application the applicant must furnish evidence as to his financial and technical qualifications and as to his ability to comply with the terms and conditions of the model clauses set out in the Second Schedule to the Regulations. In the case of an application by an alien or a company incorporated outside Great Britain or Northern Ireland similar evidence must be furnished in regard to the operating company to be incorporated in this country.

The maximum area for which any one prospecting licence can be granted is two hundred square miles and the minimum area eight square miles. The maximum area for a mining licence is one hundred square miles and the minimum area four square miles.

A separate application must be made in respect of each separate area, but one licence may cover two or more areas subject to the maximum areas allowed for prospecting and mining licences, respectively. More than one licence may be granted to the same person or company.

Every prospecting licence and mining licence must incorporate such of the model clauses as are appropriate, subject to such modifications and exclusions as the Board of Trade think fit in any particular case.

Model Clauses

The Model Clauses are set out in three parts, viz.,

Part I.—Clauses common to both Prospecting and Mining Licences.

,, II.—Clauses applicable to Prospecting Licences.

,, III.—Clauses applicable to Mining Licences.

The following is a summary of the more important provisions :

Part I.—Clauses Common to both Prospecting and Mining Licences

The exclusive right is given to search and bore for and get petroleum over the area covered by the licence. The area is to be determined by reference to a 6-inch Ordnance Survey Map to be annexed to the licence.

The licensee has the right at any time to determine the licence by giving not less than three months' notice in the case of a prospecting licence and 18 months' notice in the case of a mining licence, and has the right to abandon portions of the licensed area by giving two months' notice in the case of a prospecting licence and six months' notice in the case of a mining licence.

Provisions as to methods of working, prevention of waste and damage, etc.: In order to ensure that operations shall be carried out in a workmanlike manner in accordance with good oilfield practice, clauses are included dealing with matters such as the avoidance of harmful methods of working, the protection of mines and workable coal seams, the disposal of waste oil, salt water and refuse, the effective plugging of boreholes, the health and safety of workers, and the preservation of amenities.

Disposal of crude oil and products thereof: The Board of Trade may require that crude oil or products thereof shall be sold only for consumption in Great Britain or Northern Ireland so long as they can be consumed in the home market.

Keeping of records: Provision is made requiring the keeping of necessary plans, records and statistical information, including geological plans, maps and records, and the licensee is required to supply such information as the Board of Trade may require in regard to operations in the licensed area.

Prospectuses: No statement may be made in any notice, advertisement or prospectus issued by the licensee suggesting that any Government Department has formed or expressed any opinion as to the petroleum prospects of the licensed area. The substance of this provision is required to be included in any prospectus or similar document offering any shares or debentures for purchase by the public.

Security: The licensee must deposit a sum of money as security, or furnish a banker's guarantee which subject to minimum amounts is fixed by reference to the size of the area. The deposit or banker's guarantee is £6 per square mile in the case of a prospecting licence and £20 per square mile in the case of a mining licence, subject to a minimum of £400 for a prospecting licence and £1,000 for a mining licence. The Board of Trade may utilise this deposit or banker's guarantee to meet any expenses of the Board incurred in executing works which may be necessary owing to the licensee failing to comply with certain specified obligations designed to secure proper methods of working, the safety of workers, etc.

Assignment or transfer: The licensee may not assign the rights granted by the licence to any person other than a British subject or a company incorporated in Great Britain or Northern Ireland, and must secure the consent of the Board of Trade to any proposed assignment.

If the licensee ceases to be a British subject he must inform the Board and apply for their consent to an assignment in accordance with the provisions of the clause relating to assignment or transfer.

Special provisions applicable to Foreigners: In the event of the licensee, being a company, becoming controlled directly or indirectly

by an alien or company incorporated outside Great Britain or Northern Ireland, or if the licence is assigned with the consent of the Board of Trade to a company controlled directly or indirectly by an alien or by a company incorporated outside Great Britain or Northern Ireland, at least one of the directors of the company shall be a British subject and a majority of the persons employed in connexion with operations under the licence must be British subjects. It is also provided that licences may only be held by nationals of those countries the laws of which accord comparable rights to British nationals.

Revocation : Power is given to revoke the licence in the event of the minimum annual payments or royalties being in arrear, or of the licensee becoming insolvent or failing to comply with the terms and conditions of the licence.

Arbitration : Provision is made, save where it is expressly provided that matters are to be determined by the Board of Trade or the licensee, for arbitration in the event of any dispute arising between the Board and the licensee as to the meaning or effect of any clause of the licence, or if the licensee objects to any of the instructions given by the Board in regard to methods of working, prevention of waste, etc., on the ground that they are unreasonable.

Minimum annual payments and royalties : Clauses will be inserted in each licence providing for the payment of sums to be agreed by the Board of Trade with the consent of the Treasury, and the licensee. Minimum annual payments, to merge in royalties as these become payable, will be based upon the size of the licensed area. Royalty will be calculated upon the volume or weight of crude oil won and casinghead petroleum spirit recovered. A deduction will be allowed for oil or products used for field purposes. Royalty on natural gas will be a percentage of the sale price.

Part II.—Clauses applicable to Prospecting Licences

Period : Prospecting licences will be granted for an initial period of three years, subject to renewal for two further periods of one year each at the discretion of the Board of Trade.

Right to a Mining Licence : A licensee who complies with the Regulations and with the conditions of the licence will be entitled to the grant of a mining licence over an area not exceeding one-half of the area covered by a prospecting licence, but the Board of Trade may at their discretion increase this proportion.

Working obligations : A licensee must carry out with due diligence a scheme of prospecting or development, including a geological or geophysical survey and/or a programme of test drilling, to be agreed with the Board of Trade and set out in a Schedule to the licence.

Part III.—Clauses applicable to Mining Licences

Period: Mining licences will be granted for an initial period of 50 years with the right to a renewal for a further period of 25 years upon specified conditions.

Unit development: In some oil-producing countries much wasteful and uneconomic drilling has taken place by rival concerns often operating on relatively small plots of land and much of the original gas and reservoir energy has consequently been dissipated. Sometimes an effort is made after damage has already been done to secure the further development of the field as a unit, but great difficulties arise at that stage owing to the vested interests which have been established.

Under the general scheme laid down in the new Act and Regulations it should be possible for licensees to carry out prospecting and drilling operations in such a way that if oil is discovered a plan of development can be followed covering complete oil structures.

Should it be found, however, that two or more licensed areas operated by different licensees cover the same oil structure provision is made under which a scheme of co-operative working can be established so as to secure that the oilfield is developed as a unit, with the object of securing an increased ultimate recovery of petroleum, avoidance of waste and reduction in working costs.

Periodical revision of royalties: There is provision for periodical revision of royalties at stated intervals commencing in 1951. It is provided that the rate of royalty on crude oil shall not be less than 3*s.* per ton nor more than 6*s.* per ton. Royalty on casinghead petroleum spirit recovered shall not be less than $\frac{1}{8}d.$ per gallon and shall not exceed 2*d.* per gallon.

Operations under licences granted under the Petroleum (Production) Act, 1918.—Operations near Worth, Sussex, were continued during the early part of 1934 by the N.M.D. Syndicate, Limited, but were then temporarily suspended. A small production of oil was again obtained during the year from the well at Hardstoft in Derbyshire.

Scottish Shale Oil Industry.—The output of shale in 1934 was 1,401,000 tons valued at £410,000, as compared with 1,397,000 tons valued at £401,000 in 1933. The production of crude oil and crude naphtha amounted to $30\frac{1}{3}$ million gallons in 1934—an increase of 331,000 gallons. It is estimated that 25,000 tons of sulphate of ammonia were also produced on the basis of 40 lbs. of this product to each ton of shale raised.

IMPORTS, CONSUMPTION AND PRICES.

Taxation of Imported Petroleum Products.—No changes in the taxation of imported petroleum products were made during the year. The duty on light hydrocarbon oils imported or produced in this country from imported crude or semi-refined petroleum thus remained at 8*d.* per gallon; and that on all other oil (except oil for bunkers for foreign-going or coastwise shipping and fishing vessels) at 1*d.* per gallon.

Imports of Petroleum.—The imports of petroleum and petroleum products in 1934 distinguishing the countries from which the imports are consigned are shown in Table 64 of Appendix A. As in previous years, the largest proportion of the refined products are imported ready for use. Substantial quantities of crude petroleum are, however, imported for refining in this country and some of the partly refined products are subjected to further treatment for the production of other products. In order to obtain an approximate estimate of consumption of refined products it is therefore necessary to have regard to the throughput and output of the refineries.

The following table, compiled from returns furnished by the principal oil refining companies, shows the quantities of oils treated and the products obtained :—

Refinery Operations in Great Britain

	1934	1933	1932
Oils treated		1,000 *gallons*	
Imported crude Petroleum ..	464,558	402,238	361,275
Imported partly refined Oils ..	66,426	114,418	164,575
Scotch Shale Oil	31,472	29,439*	29,679
Total	562,456	546,095	555,529
Products obtained			
Motor Spirit	144,799	149,377	159,321
Other Spirit	24,389	20,702	17,068
Kerosene	34,471	38,384	42,997
Gas Oil	53,423	46,355*	36,882
Fuel and Diesel Oil	133,420	141,673*	159,119
Lubricating Oil	24,704†	19,062†	19,074†
Other Oils‡	143	10,213	5,267
Total	415,349	425,766	439,728
		Tons	
Total Solid Products .. .. (Asphalt and pitch; wax; and petroleum coke)	488,202	402,297	367,321

Petroleum Products available for Consumption.—The following figures show the approximate quantities of petroleum products available for consumption. As no adjustment is made for variations

* Revised figures.

† These figures represent the production of lubricating oil by refiners of imported crude and other heavy petroleum oils and shale oil and do not include the manufacture of lubricating oils by merely blending or chemically treating imported lubricants.

‡ Mainly liquid bitumen and process oils for further treatment.

in stocks held at the beginning and end of the year the figures cannot be regarded as other than approximate.

Approximate quantity of Petroleum Products (including oils from Scottish Shale) available for consumption in Great Britain and Northern Ireland

Description	1934	1933*	1932
	Million gallons		
Motor Spirit	1,172·5	1,138·2	1,044·8
Other Spirit	26·4	21·2	16·8
Kerosene	228·0	191·6	184·9
Gas Oil	159·1	138·7	119·8
Fuel and Diesel Oil	768·8†	618·9†	554·9†
Lubricating Oil	100·9	100·8	86·2
Other Oils‡	0·6	10·4	5·8
Total	2,456·3	2,219·8	2,013·2

Further details are given in Table 65 of Appendix A.

The quantity of fuel oil shipped as bunkers for vessels engaged in foreign trade reached the record figure in 1934 of 353 million gallons, which was 107 million gallons greater than in 1933. Although the tonnage of motor ships and oil-fired steamers has progressively increased during recent years, the bulk of the increased shipments of fuel oil in this country in 1934 for bunkers appears to have been largely due to diversion of trade from the United States ports owing to fiscal changes and consequent increases in prices in the United States of America. Certain large liners now bunker for the round trip on this side of the Atlantic instead of in the United States as hitherto.

Prices of Petroleum Products.—The average declared c.i.f. value of petroleum and petroleum products imported during the last three years was as follows :—

Description	*Average Declared c.i.f. Value* 1934	1933	1932
	Pence per gallon		
Crude Oil	2·0	2·0	2·2
Lamp Oil (Kerosene)	2·6	2·9	3·3
Motor Spirit	3·3	3·4	4·0
Lubricating Oil	8·1	8·7	10·5
Gas Oil	2·5	2·5	2·4
Fuel Oil	1·7	1·8	1·8

* Revised figures.

† Including fuel oil shipped for the use of steamers, etc., engaged in the foreign trade (including fishing vessels) which amounted to 353 million gallons in 1934; 246 million gallons in 1933; and to 181 million gallons in 1932.

‡ Mainly liquid bitumen and process oils for further treatment.

On the whole the level of prices was rather lower than in 1933, but the decreases were not so great as was the case in 1933 compared with 1932. In the early months of 1935 a rising tendency was shown.

Wholesale and Retail Prices of Motor Spirit.—England, Wales and South Scotland Zone

Date.	No. 1 Grade used by ordinary motorist.		No. 3 or Commercial Grade.		Amount of Duty.
	Including duty.		Including duty.		
	Wholesale.	Retail.	Wholesale.	Retail.	
	Ex-pump per Imperial Gallon.				
1929.	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*d.*
1st November	1 5½	1 7	1 3½	1 5	4
1930.					
23rd September	1 3½	1 5	1 1½	1 3	4
21st October	1 3	1 4½	1 1	1 2½	4
1931.					
3rd March	1 1½	1 2½	0 11½	1 0½	4
28th April	1 3½	1 4½	1 1½	1 2½	6
22nd May	1 2½	1 3½	1 0½	1 1½	6
18th July	1 1½	1 2½	0 11½	1 0½	6
11th September	1 3½	1 4½	1 1½	1 2½	8
1932.					
14th September	1 6½	1 7½	1 4½	1 5½	8
1933.					
17th May	1 4	1 5	1 2	1 3	8
3rd November	1 5	1 6	1 3	1 4	8
1934.					
22nd March	1 4	1 5	1 2	1 3	8

NOTE : Since 21st October, 1930, prices in the England, Wales and South Scotland Zone have been the same as in the Outer London Zone. Previously, prices in the Outer London Zone were ½*d.* per gallon cheaper. The Outer London Zone, roughly speaking, consists of the Home Counties. The Inner London Zone is confined practically to the City of London, and most business with motorists in that Zone is done in cans.

It was not found possible to maintain the increase of 1*d.* a gallon which had been made in the price of motor spirit in November, 1933, and in March, 1934, the price reverted to that which was fixed in May, 1933.

Wholesale and Retail Prices of Kerosene.—The wholesale prices of kerosene in England and Wales quoted by the large oil companies

were raised by a $\frac{1}{2}d.$ per gallon on the 25th July, 1934. The price of "Standard White," in which most business is transacted, then became $7\frac{1}{2}d.$ per gallon for delivery *ex* tank wagon in the "London, Yarmouth, and Lowestoft" Zone, and $8d.$ per gallon in the rest of England and Wales. The price of "Water White," a superior grade was higher by $1d.$ per gallon. A change in the boundaries of the zones in Scotland was effected as from 1st August, 1934, and a new schedule of prices operated from the same date. In the southern area no general alteration was made in the price of kerosene, but prices in the more remote areas were increased. Concession on the schedule prices are obtainable for purchases in bulk. The prices quoted by independent suppliers *ex* ocean installation was $4\frac{1}{8}d.$ per gallon at the beginning of the year. They hardened slightly during the early part of the year, but fell to $3\frac{7}{8}d.$ at the end. The average for the whole year was about $4d.$ per gallon. The duty of $1d.$ per gallon is included in all of the above prices.

The retail price of kerosene varies considerably from district to district and there is no official information available which would enable representative figures to be given.

Wholesale prices of Furnace Fuel Oil, Diesel Oil and Gas Oil.—There is no retail market for these oils and purchases are usually made by contract. Prices are, therefore, generally subject to negotiation and vary according to the size and nature of the contract. No changes were made by the oil companies in their general schedule of prices of fuel and diesel oils during the year, and the following are quoted as being typical prices current during 1934.

Diesel oil *ex* ocean installation for contracts of over 100 tons and under 400 tons per annum was quoted at $4\frac{5}{8}d.$ per gallon; light fuel oil $\frac{1}{8}d.$ less; heavy fuel oil was quoted at $3\frac{7}{8}d.$ per gallon.

The price of gas oil *ex* wharf for contracts of 100 tons to 400 tons per annum was $\frac{5}{8}d.$ per gallon lower at the end of the year than it was at the beginning. The reduction was made in two stages: the first on 26th June, when the price, including tax, was reduced from $4\frac{5}{8}d.$ per gallon to $4\frac{3}{8}d.$, and the second to $4d.$ per gallon on 17th December. The duty of $1d.$ per gallon is included in all the above prices.

APPENDIX A.—STATISTICAL TABLES.—CONTENTS.

(*Except where otherwise stated the particulars relate to the Year* 1934.)

PRODUCTION.

General.

Coal.

Metalliferous Ores.

NUMBERS EMPLOYED, DAYS WORKED AND WAGES.

Employment.

Wages.

COSTS OF PRODUCTION, PROCEEDS AND PROFITS IN THE COAL-MINING INDUSTRY.

DISTRIBUTION AND CONSUMPTION.

Coal.

Other Minerals.

PRICES.

PLANT AND EQUIPMENT.

TABLE 1.—*Quantity and Net Selling Value of Minerals produced in Great Britain during the Years* 1934, 1933 *and* 1932.

NOTE.—Except for metalliferous minerals and a few others of special importance the produce of quarries less than 20 feet deep is excluded. The classification of the minerals on a use basis has been carried out with as much exactitude as the information available permits. In some instances, it has been possible to sub-divide particular minerals between two or more groups; but in other cases the information available is not sufficient to enable this to be done, and the mineral is included in the group for which it is mainly used.

Kind of Mineral.	Quantity of Mineral raised or quarried in			Total Net Selling Value of Mineral at Mine or Quarry in			Average Net Selling Value per ton of Mineral at Mine or Quarry in								
	1934.	1933.	1932.	1934.	1933.	1932.	1934.			1933.			1932.		
	Tons.	Tons.	Tons.	£	£	£	£	s.	d.	£	s.	d.	£	s.	d.
(*a*) **Coal**	**220,726,298**	**207,112,243**	**208,733,140**	**142,118,537**	**134,646,091**	**138,378,935**	**0**	**12**	**11**	**0**	**13**	**0**	**0**	**13**	**3**
(*b*) **Iron Ore and Ironstone—**															
West Coast Hematite (Non-phosphoric) ..	813,199	632,894	551,697	541,588	444,475	422,966	0	13	4	0	14	1	0	15	4
Jurassic :															
Cleveland	1,641,921	1,012,753	1,083,168	470,654	291,413	300,276	0	5	9	0	5	9	0	5	7
Other Sorts	7,840,703	5,614,976	5,482,677	1,058,622	749,310	735,985	0	2	8	0	2	8	0	2	8
Coal Measures	142,963	94,691	149,194	} 171,312	122,670	141,165	—			—			—		
Other Occurrences ..	148,060	106,406	61,454												
Total : Iron Ore and Ironstone ..	**10,586,846**	**7,461,720**	**7,328,190**	**2,242,176**	**1,607,868**	**1,600,392**	**0**	**4**	**3**	**0**	**4**	**4**	**0**	**4**	**4**
(*c*) **Non-ferrous Ores :**															
Tin Ore, dressed (Black Tin)	3,224	2,337	2,025	404,894	272,108	157,289	125	11	6	116	8	4	77	13	5
Lead Ore, dressed ..	68,122	49,056	40,633	396,537	303,127	242,300	5	16	5	6	3	7	5	19	3
Zinc Ore, dressed ..	988	9	8	913	9	8	0	18	6	1	0	0	1	0	0
Copper Precipitate ..	23	64	90	304	812	1,282	13	4	4	12	13	9	14	4	11
Other Non-ferrous Ores*	—	—	—	23,758	1,032	108	—			—			—		
Total Value : Non-ferrous Ores ..	—	—	—	**826,406**	**577,088**	**400,987**	—			—			—		

(*d*) **Minerals (other than Metalliferous Ores) used mainly in Iron and Steel Making and other Smelting Processes:**											
Fluorspar	34,216	28,058	15,427	28,232	22,859	11,772	0	16	6	0 16 4	0 15 3
Silica Stone (including Ganister and Silica Sand) used as Refractory Material ..	532,437	447,264	372,803	185,061	153,504	139,932	0	6	11	0 6 10	0 7 6
Limestone and Dolomite for use as flux in Blast Furnaces	2,072,297	1,508,747	1,359,002	315,033	230,895	208,409	0	3	0	0 3 1	0 3 1
Dolomite for use as a Refractory Material	487,624	376,056	283,584	80,188	61,526	46,357	0	3	3	0 3 3	0 3 3
Moulding and Pig-bed Sand	713,659	571,975	491,065	113,061	94,395	80,997	0	3	2	0 3 4	0 3 4
Fireclay	2,015,592	1,683,945	1,543,860	656,333	552,112	530,166	0	6	6	0 6 7	0 6 10
Total Value: Minerals (other than Metalliferous Ores) used mainly in Iron and Steel Making and other Smelting Processes	—	—	—	**1,377,908**	**1,115,291**	**1,017,633**		—		—	—
(*e*) **Minerals used mainly in China, Pottery and Glass Manufacture:**											
China Clay	690,129	596,609	508,850	765,658	635,216	557,857	1	2	2	1 1 4	1 1 11
Potters' Clay (including Ball Clay)	152,558	146,550	129,741	131,225	120,550	106,671	0	17	2	0 16 5	0 16 5
China Stone	47,993	33,462	45,091	66,261	42,300	59,087	1	7	7	1 5 3	1 6 2
Limestone for use in glass-making	87,074	71,296	53,980	21,664	19,081	13,796	0	5	0	0 5 4	0 5 1
Sand for use in glassmaking	119,848	101,488	87,508	28,148	23,486	19,177	0	4	8	0 4 8	0 4 5
Chert for use in the china and pottery trades	4,222	4,079	3,529	14,566	14,443	12,582	3	9	0	3 10 10	3 11 4
Total Value: Minerals used mainly in China, Pottery and Glass Manufacture	—	—	—	**1,027,522**	**855,076**	**769,170**		—		—	—

* Under this heading are comprised the following dressed ores the production of which, so far as it is available for publication, is shown in Table 5 :—Tungsten Ore, Copper Ore and Gold Ore.

TABLE 1—*continued.*

Kind of Mineral.	Quantity of Mineral raised or quarried in			Total Net Selling Value of Mineral at Mine or Quarry in			Average Net Selling Value per ton of Mineral at Mine or Quarry in								
	1934.	1933.	1932.	1934.	1933.	1932.	1934.			1933.			1932.		
(*f*) Minerals used mainly for Building and Roadmaking, Lime, Cement, Concrete, etc. :	Tons.	Tons.	Tons.	£	£	£	£	s.	d.	£	s.	d.	£	s.	d.
Clay, Shale, etc.	21,920,280	18,385,520	14,876,463	1,865,883	1,578,294	1,353,989	0	1	8	0	1	9	0	1	10
Gravel and Sand*	13,161,560	10,912,147	8,670,501	1,875,748	1,507,508	1,323,523	0	2	10	0	2	9	0	3	1
Igneous Rocks*	8,839,985	8,701,207	9,144,623	2,633,021	2,662,855	3,005,214	0	5	11	0	6	1	0	6	7
Sandstone*	3,177,498	2,848,913	2,804,749	1,250,775	1,161,180	1,249,475	0	7	10	0	8	2	0	8	11
Slate†	290,455	272,518	252,854	1,687,205	1,491,028	1,481,811	5	16	2	5	9	5	5	17	2
Chalk	7,681,698	6,483,534	6,036,431	526,764	444,503	413,102	0	1	4	0	1	4	0	1	4
Chert and Flint	157,356	171,564	169,110	27,525	27,769	29,102	0	3	6	0	3	3	0	3	5
Limestone*	10,536,104	9,751,961	9,466,722	2,166,792	2,116,628	2,188,995	0	4	1	0	4	4	0	4	7
Gypsum (including Anhydrite) Raw Stone	410,172	345,502	278,832	176,131	159,466	127,261	0	8	7	0	9	3	0	9	2
Dressed, roughly ground or broken stone ..	551,409	639,553	716,590	283,920	319,625	357,504	0	10	4	0	10	0	0	10	0
Total Value : Minerals used mainly for Building and Roadmaking, Lime, Cement, Concrete, etc.	—	—	—	**12,493,764**	**11,468,856**	**11,529,976**	—			—			—		
(*g*) Other Minerals :															
Arsenic (White) and Arsenic Soot	185	121	247	2,835	2,052	5,470	15	6	6	16	19	2	22	2	11
Iron Pyrites	2,145	1,132	992	354	394	567	0	3	4	0	7	0	0	11	5

Barytes and Witherite—												
Not Ground‡	48,131	45,054	41,971	63,589	51,919	51,515	1	6	5	1	3	1	1	4	7
Ground—															
Bleached	5,548	7,623	1,881	20,112	27,221	7,054	3	12	6	3	11	5	3	15	0
Unbleached	20,315	13,943	12,787	45,795	30,749	29,870	2	5	1	2	4	1	2	6	9
Calcspar	22,280	18,472	15,546	20,689	16,117	12,478	0	18	7	0	17	5	0	16	1
Gravel and Sand	60,156	36,292	94,700	11,135	7,430	17,678	0	3	8	0	4	1	0	3	9
Igneous Rocks	29,487	94,026	69,074	5,321	18,427	15,859	0	3	7	0	3	11	0	4	7
Limestone for :															
Chemical purposes ..	915,076	842,530	828,314	184,099	168,882	213,202	0	4	0	0	4	0	0	5	2
Other purposes	573,354	512,742	309,125	110,856	94,528	66,893	0	3	10	0	3	8	0	4	4
Mica Clay	8,070	8,151	21,057	4,308	4,697	12,288	0	10	8	0	11	6	0	11	8
Oil Shale	1,400,775	1,396,988	1,368,596	409,712	400,963	362,762	0	5	10	0	5	9	0	5	4
Salt, Brine—															
Salt obtained from Brine	793,988	776,890	691,567	982,551	1,019,372	936,443	1	4	9	1	6	3	1	7	1
Salt contained in Brine used for purposes other than Salt making ..	1,694,703	1,556,426	1,496,456	65,271	60,106	59,731	0	0	9	0	0	9	0	0	10
Salt, Rock§	17,371	19,522	16,885	22,075	22,287	21,386	1	5	5	1	2	10	1	5	4
Sandstone	88,677	101,047	92,015	79,707	78,042	77,546	0	18	0	0	15	5	0	16	10
Other minerals‖	—	—	—	85,324	83,469	87,442		—			—			—	
Total Value: Other Minerals ..	—	—	—	**2,113,733**	**2,086,655**	**1,978,184**		—			—			—	
Grand Total (Value)	—	—	—	**162,200,046**	**152,356,925**	**155,675,277**		—			—			—	

* For further particulars see Table 37.

† Including in 1934, 23,064 tons of crude or roughly dressed slate, valued at £4,804, used chiefly for building, metalling roads, hedging, etc. It was obtained, for the most part, from quarries in the Counties of Aberdeen and Devon and in the Isle of Man. Dressed slate for building and monumental purposes is also included, but the quantity and value of such slate cannot be stated.

‡ Including 10,412 tons of Witherite in 1934, 5,111 tons in 1933 and 6,258 tons in 1932.

§ The output of "Scotch Salt" in 1934 amounted to 1,971 tons, the value of which at Works was £12,422. This was made from rock salt purchased from England, Ireland or elsewhere and dissolved in sea water. About 97 per cent. of the final product was obtained from the rock salt.

‖ In order to avoid the possible disclosure of information relating to individual firms the output value of the following minerals has been aggregated above, *viz.*,

Mineral	Quantity Produced.			Mineral.	Quantity Produced.		
	1934.	1933.	1932.		1934.	1933.	1932.
	Tons.	Tons.	Tons.		Tons.	Tons.	Tons.
Alum Clay and Shale	2,274	4,476	12,116	Fuller's Earth	Particulars are	not available fo	r publication.
Bog Ore and Iron Ore used otherwise than for iron making	9,709	8,256	9,533	Ochre, Umber, etc.	7,393	8,707	7,748
Celestine (Sulphate of Strontium)	9,440	3,862	6,852	Petroleum	29	39	91
				Soapstone	—	166	258

In addition small quantities of Natural Gas were obtained in each year.

TABLE 2.—*Quantity and Net Selling Value of Minerals raised and Number Workings in each County of*

NOTE.—For particulars of the uses to which certain

COUNTY.	QUANTITY OF MINERALS											
	Coal.	Principal Metalliferous Ores.			OTHER							
		Iron Ore and Ironstone.	Lead Ore, dressed.	Tin Ore, dressed.	Barytes and Witherite.	Chalk.	Chert and Flint.	Clay, Shale, &c.	Fireclay.	Gravel and Sand.		Gypsum (including Anhydrite).
										Moulding and Pig-bed Sand.	Other Sorts.	
ENGLAND:	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Bedford.. ..	—	—	—	—	—	585,205	—	2,501,529	—	12,704	311,223	—
Berks	—	—	—	—	—	6,550	60	255,238	—	—	168,539	—
Buckingham ..	—	—	—	—	—	16,097	—	726,570	—	—	448,217	—
Cambridge ..	—	—	—	—	—	374,425	1,000	1,093,639	—	—	17,274	—
Chester.. ..	69,427	—	—	—	—	—	—	524,270	26,736	9,115	96,163	—
Cornwall ..	—	—	—	3,222	—	—	1,532	30,911	1,060	150	—	—
Cumberland ..	1,564,204	711,243	1,881	—	—	—	—	72,615	13,019	349	6,074	59,404
Derby	12,509,718	—	40,336	—	4,264	—	5,233	547,239	57,930	15,190	219,318	4,434
Devon	—	246	—	2	16,068	—	2,196	423,404	633	407	150,796	—
Dorset	—	—		—	—	2,060	—	185,934	36	—	205,086	—
Durham ..	30,590,076	—	159	—	3,815	—	—	736,290	215,465	4,844	493 248	355,579
Essex	—	—	—	—	—	1,472,179	7,914	321,880	—	11,147	1,172,401	—
Gloucester ..	1,378,841	3,563	—	—	—	—	—	252,919	10,864	—	21,234	—
Hants	—	—	—	—	—	89,556	1,319	201,203	—	—	73,953	—
Hereford ..	—	—	—	—	—	—	—	18,242	—	—	7,572	—
Hertford ..	—	—	—	—	—	16,250	3	35,467	—	141	1,044,447	—
Huntingdon ..	—	—	—	—	—	—	—	2,025,439	—	—	—	—
Kent	2,030,491	—	—	—	—	3,606,812	54,276	690,868	—	82,183	1,306,577	—
Lancaster ..	13,688,918	101,956	—	—	—	—	—	2,258,127	124,317	52,466	430,311	—
Leicester ..	2,347,520	870,759	—	—	—	—	—	657,166	38,436	—	74,462	34
Lincoln.. ..	—	3,589,704	—	—	—	228,707	6,301	143,015	16,844	7,065	55,090	—
Middlesex ..	—	—	—	—	—	8,624	—	31,500	—	—	1,792,162	—
Monmouth ..	9,712,019	1,067	—	—	—	—	—	96,993	26,674	—	—	—
Norfolk.. ..	—	—	—	—	—	15,686	61,044	25,555	—	20,262	292,248	—
Northampton ..	—	2,381,614	—	—	—	—	—	364,029	2,467	—	104,070	—
Northumberland	13,831,073	—	1,115	—	6,597	—	—	159,306	92,781	150	41,607	—
Nottingham ..	14,308,552	—	—	—	—	—	—	443,107	—	194,074	177,639	254,629
Oxford	—	524,122	—	—	—	82,145	—	104,451	—	—	6,261	—
Rutland ..	—	474,504	—	—	—	—	—	29,577	—	—	—	—
Salop	675,716	45	—	—	13,262	—	—	128,652	25,196	4,794	30,268	—
Somerset ..	696,359	—	—	—	—	—	6,164	184,820	—	—	501	—
Stafford.. ..	12,440,401	126,701	—	—	—	—	—	1,438,782	313,787	116,681	855,652	*220,400
Suffolk	—	—	—	—	—	85,781	8,184	61,957	—	8,753	169,959	—
Surrey	—	—	—	—	—	118,682	653	136,750	214	—	907,707	—
Sussex	—	—	—	—	—	404,488	1,082	228,309	—	2,729	345,920	*
Warwick ..	5,149,672	1,238	—	—	—	—	—	944,357	112,682	—	401,015	—
Westmorland ..	—	—	963	—	154	—	—	—	—	—	1,371	67,101
Wilts	—	—	—	—	—	9,218	70	22,360	—	—	4,042	—
Worcester ..	301,066	65	—	—	—	—	—	288,096	52,112	76,223	152,456	—
York	39,852,601	1,642,078	7	—	955	558,243	2,584	2,266,600	262,583	26,197	835,494	—
Total ..	161,146,654	10,428,905	44,461	3,224	45,115	7,680,708	159,615	20,657,166	1,393,836	645,624	12,420,357	961,581

* Gypsum produced in Sussex is included with Staffordshire.

of Persons Employed at all Mines and Quarries and certain other Mineral Great Britain during the Year 1934.

of the Minerals are put *see* Tables 1 and 37.

Raised (*see also* page 114). Minerals.									Total Net Selling Value of all Minerals Raised.	Persons Employed.			County.
Igneous Rocks.	Limestone (including Calcspar).	Ochre, Umber, &c.	Potters' Clay (including Ball Clay).	Salt.		Sandstone.		Slate.		Below Ground at Mines (and Inside at Quarries).	Above Ground at Mines (and Outside at Quarries).	Total Number.	
				Brine.	Rock.	Silica Stone (including Ganister and Silica Sand) used as Refractory Material.	Other Sorts.						
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£				ENGLAND :
—	27,684	—	—	—	—	92,726	—	—	208,018	459	155	614	Bedford.
—	6,940	—	—	—	—	—	5	—	56,639	256	47	303	Berks.
—	—	—	—	—	—	1,500	5	—	96,898	233	153	386	Buckingham.
—	260	—	—	—	—	—	—	—	57,436	185	58	243	Cambridge.
—	—	—	—	2,073,750	17,371	11,940	156,728	—	925,739	722	2,051	2,773	Chester.
918,455	—	13	—	—	—	—	30,841	15,780	1,577,508	3,751	3,137	6,888	Cornwall.
152,142	393,802	—	—	—	—	3,043	6,369	3,375	1,709,692	7,212	2,401	9,613	Cumberland.
129,825	3,702,341	94	450	—	—	39,395	134,248	—	9,102,758	39,999	12,451	52,450	Derby.
322,910	429,298	1,072	89,635	—	—	—	166,707	2,689	494,607	1,816	1,045	2,861	Devon.
—	82,153	—	58,235	—	—	16,134	—	—	241,352	825	308	1,133	Dorset.
112,976	1,027,681	—	—	†89,158	—	39,276	74,347	—	19,068,181	87,420	23,597	111,017	Durham.
—	—	—	—	—	—	—	—	—	295,530	589	356	945	Essex.
—	717,140	1,521	—	—	—	—	88,844	—	1,215,030	5,914	1,540	7,454	Gloucester.
—	4,833	—	—	—	—	—	—	—	44,146	220	80	300	Hants.
19,928	28,716	—	—	—	—	—	348	—	16,893	101	19	120	Hereford.
—	—	—	—	—	—	—	—	—	151,845	514	124	638	Hertford.
—	—	—	—	—	—	—	—	—	61,678	147	68	215	Huntingdon.
—	249,144	—	—	—	—	42,509	392	—	2,147,387	7,424	1,613	9,037	Kent.
34,422	369,429	—	—	† 200,276	—	23,387	582,036	10,863	11,348,063	48,523	17,792	66,315	Lancaster.
865,590	220,072	—	1,044	—	—	—	—	—	2,041,833	9,144	3,533	12,677	Leicester.
—	166,730	—	—	—	—	—	—	—	564,974	1,171	222	1,393	Lincoln.
—	—	—	—	—	—	—	—	—	283,378	208	249	457	Middlesex.
—	121,694	—	—	—	—	349	23,743	—	6,407,093	31,216	5,533	36,749	Monmouth.
—	—	—	—	—	—	5,699	277	—	68,351	468	95	563	Norfolk.
—	172,528	—	—	—	—	—	7,178	—	419,806	992	446	1,438	Northampton.
508,978	64,588	—	—	—	—	—	25,992	—	7,753,749	33,826	10,921	44,747	Northumber'd.
—	261,404	—	—	—	—	4,495	4,613	—	9,047,049	37,521	10,604	48,125	Nottingham.
—	307,644	—	—	—	—	618	115	—	87,509	261	93	354	Oxford.
—	166,881	—	—	—	—	—	—	—	82,565	204	53	257	Rutland.
404,696	181,247	—	—	—	—	—	52,476	—	754,180	2,802	1,017	3,819	Salop.
9,560	1,541,291	4,475	936	—	—	—	75,682	925	898,857	4,146	1,268	5,414	Somerset.
133,555	66,145	—	2,258	†	—	19,487	19,652	—	9,506,429	39,615	13,696	53,311	Stafford.
—	—	—	—	—	—	1,017	300	—	43,712	261	41	302	Suffolk.
—	—	—	—	—	—	—	13,766	—	200,475	495	187	682	Surrey.
—	200	—	—	—	—	—	17,084	—	135,595	510	104	614	Sussex.
122,799	265,926	—	—	—	—	—	323,711	—	4,124,797	13,410	5,145	18,555	Warwick.
79,494	174,621	—	—	—	—	—	11,534	3,969	109,885	352	247	599	Westmorland.
—	31,668	—	—	—	—	—	890	—	44,111	196	121	317	Wilts.
155,137	21,143	—	—	65,507	—	2,807	7,776	—	370,257	1,075	588	1,663	Worcester.
95,434	1,382,338	—	—	†	—	77,811	904,301	—	27,045,869	118,508	34,043	152,551	York.
4,065,901	12,185,541	7,175	152,558	2,488,691	17,371	382,193	2,729,960	37,601	118,809,874	502,691	155,201	657,892	.. *Total.*

† Brine Salt produced in Yorkshire is included with Durham, and that produced in Staffordshire and in the Isle of Man is included with Lancashire.

TABLE 2

COUNTY.	Quantity of Minerals											
	Coal.	Principal Metalliferous Ores.			Other							
		Iron Ore and Ironstone.	Lead Ore, dressed.	Tin Ore, dressed.	Barytes and Witherite.	Chalk.	Chert and Flint.	Clay, Shale, &c.	Fireclay.	Gravel and Sand.		Gypsum (including Anhydrite).
										Moulding and Pig-bed Sand.	Other Sorts.	
WALES:	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Anglesey ..	—	—	—	—	—	—	—	1,538	—	—	—	—
Brecon	623,583	—	—	—	—	—	—	130	—	—	—	—
Caernarvon ..	—	—	—	—	—	—	—	46,782	—	—	5,552	—
Cardigan ..	—	—	—	—	—	—	—	—	—	—	100	—
Carmarthen ..	2,388,844	—	—	—	—	—	—	28,119	11,275	—	150	—
Denbigh ..	2,554,726	—	—	—	—	—	—	141,834	12,560	—	90,491	—
Flint	230,972	—	21,689	—	—	990	1,963	168,292	36,271	—	165,929	—
Glamorgan ..	22,398,946	146,467	—	—	—	—	—	305,531	16,894	—	—	—
Merioneth ..	—	—	—	—	—	—	—	—	—	—	—	—
Montgomery ..	—	—	74	—	50	—	—	15,050	—	—	—	—
Pembroke ..	49,925	—	—	—	—	—	—	16,650	—	—	—	—
Radnor.. ..	—	—	—	—	—	—	—	—	—	—	—	—
Total ..	28,246,996	146,467	21,763	—	50	990	1,963	723,926	77,000	—	262,222	—
SCOTLAND:												
Aberdeen ..	—	—	—	—	—	—	—	13,600	—	72	44,410	—
Angus (Forfar)	—	—	—	—	—	—	—	11,935	—	—	7,237	—
Argyll	—	—	—	—	—	—	—	—	—	—	900	—
Ayr	*4,011,103	795	—	—	20,136	—	—	8,370	90,745	5,752	48,261	—
Banff	—	—	—	—	—	—	—	—	—	—	1,741	—
Berwick ..	—	—	—	—	—	—	—	—	—	—	—	—
Bute	—	—	—	—	8,693	—	—	—	—	—	—	—
Caithness ..	—	—	—	—	—	—	—	—	—	—	2,492	—
Clackmannan ..	412,025	—	—	—	—	—	—	—	890	—	11,500	—
Dumbarton ..	514,813	—	—	—	—	—	—	—	30,007	5,420	7,376	—
Dumfries ..	*	—	1,898	—	—	—	—	9,126	—	—	2,322	—
Edinburgh ..	3,723,893	214	—	—	—	—	—	128,788	1,053	8,790	130,669	—
Fife	*7,900,456	3,277	—	—	—	—	—	124,354	44,506	—	37,056	—
Haddington ..	1,163,219	—	—	—	—	—	—	26,773	2,186	—	—	—
Inverness ..	—	—	—	—	—	—	—	—	—	—	9,006	—
Kincardine ..	—	—	—	—	—	—	—	—	—	—	640	—
Kinross.. ..	—	—	—	—	—	—	—	—	—	—	—	—
Kirkcudbright..	—	—	—	—	—	—	—	—	—	—	17,978	—
Lanark	9,227,317	5,776	—	—	—	—	—	76,872	107,603	43,165	201,245	—
Linlithgow ..	2,418,800	258	—	—	—	—	—	86,093	40,207	—	6,058	—
Moray	—	—	—	—	—	—	—	7,000	—	—	4,127	—
Nairn	—	—	—	—	—	—	—	—	—	—	—	—
Orkney.. ..	—	—	—	—	—	—	—	—	—	—	—	—
Peebles.. ..	—	—	—	—	—	—	—	—	—	—	380	—
Perth	—	—	—	—	—	—	—	—	—	—	4,062	—
Renfrew ..	—	—	—	—	—	—	—	13,000	†	—	2,520	—
Ross & Cromarty	—	—	—	—	—	—	—	—	—	—	11,424	—
Roxburgh ..	—	—	—	—	—	—	—	—	—	—	—	—
Selkirk	—	—	—	—	—	—	—	—	—	—	—	—
Shetland ..	—	—	—	—	—	—	—	—	—	—	—	—
Stirling.. ..	1,961,022	1,154	—	—	—	—	—	8,652	†227,559	4,674	64,484	—
Sutherland ..	*	—	—	—	—	—	—	6,127	—	—	3,701	—
Wigtown ..	—	—	—	—	—	—	—	—	—	162	1,849	—
Total ..	31,332,648	11,474	1,898	—	28,829	—	—	520,690	544,756	68,035	621,438	—
ISLE OF MAN	—	—	—	—	—	—	—	18,498	—	—	37,547	—
Grand Total	**220,726,298**	**10,586,846**	**68,122**	**3,224**	**73,994**	**7,681,698**	**161,578**	**21,920,280**	**2,015,592**	**713,659**	**13,341,564**	**961,58**

* Coal produced in Dumfries is included with Ayr, and that produced in Sutherland with Fife.
† Fireclay produced in Renfrew is included with Stirling.

continued.

ISED (*see also* page 114).

nerals.

Igneous Rocks.	Limestone (including Calcspar).	Ochre, Umber, &c.	Potters' Clay (including Ball Clay).	Salt. Brine.	Salt. Rock.	Sandstone. Silica Stone (including Ganister and Silica Sand) used as Refractory Material.	Sandstone. Other Sorts.	Slate.	Total Net Selling Value of all Minerals Raised.	Persons Employed. Below Ground at Mines (and Inside at Quarries).	Persons Employed. Above Ground at Mines (and Outside at Quarries).	Persons Employed. Total Number.	COUNTY.
ons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£				WALES:
13,830	253,801	200	—	—	—	10,629	—	—	51,187	136	73	209	Anglesey.
—	99,805	—	—	—	—	4,549	8,398	—	591,805	2,461	622	3,083	Brecon.
17,399	368,191	—	—	—	—	—	—	164,680	1,376,871	3,371	4,018	7,389	Caernarvon.
12,867	—	—	—	—	—	—	22,339	—	11,264	79	15	94	Cardigan.
25,773	169,973	—	—	—	—	23,996	61,560	630	2,566,579	9,435	2,517	11,952	Carmarthen.
45,066	223,470	—	—	—	—	61,173	15,390	4,381	1,788,784	8,321	2,605	10,926	Denbigh.
—	132,702	—	—	—	—	2,818	22,118	—	365,791	1,116	555	1,671	Flint.
—	872,510	18	—	—	—	13,825	131,181	—	16,579,088	74,729	15,233	89,962	Glamorgan.
85,498	—	—	—	—	—	—	63,254	55,445	466,261	1,286	1,501	2,787	Merioneth.
65,441	—	—	—	—	—	—	14,243	1,083	29,809	132	99	231	Montgomery.
89,432	41,747	—	—	—	—	—	7,780	453	80,411	430	147	577	Pembroke.
25,748	14,299	—	—	—	—	—	1,515	—	42,249	95	90	185	Radnor.
381,054	2,176,498	218	—	—	—	116,990	347,778	226,672	23,950,099	101,591	27,475	129,066	*Total.*
													SCOTLAND:
145,465	12,556	—	—	—	—	—	2,064	2,017	156,284	791	417	1,208	Aberdeen.
268,675	—	—	—	—	—	—	13,189	—	61,109	259	91	350	Angus (Forfar)
104,047	1,714	—	—	—	—	—	64	8,650	76,437	377	306	683	Argyll.
291,202	41,822	—	—	—	—	460	7,709	—	2,219,927	7,904	2,723	10,627	Ayr.
29,779	53,782	—	—	—	—	—	19,163	1,709	22,350	191	14	205	Banff.
75,535	—	—	—	—	—	—	—	—	20,274	73	29	102	Berwick.
900	—	—	—	—	—	—	—	—	21,570	10	29	39	Bute.
19,465	—	—	—	—	—	—	5,107	—	12,217	58	16	74	Caithness.
18,239	—	—	—	—	—	—	—	—	233,977	622	169	791	Clackmannan.
90,559	—	—	—	—	—	—	132	640	402,954	1,575	586	2,161	Dumbarton.
47,438	—	—	—	—	—	—	24,380	—	282,095	970	390	1,360	Dumfries.
229,857	95,167	—	—	—	—	1,018	25,465	—	2,009,081	7,828	2,729	10,557	Edinburgh.
265,735	68,873	—	—	—	—	—	12,803	—	4,383,428	15,879	5,038	20,917	Fife.
46,148	28,076	—	—	—	—	—	4,000	—	570,010	2,308	748	3,056	Haddington.
20,967	—	—	—	—	—	—	—	163	14,051	64	36	100	Inverness.
69,402	6,054	—	—	—	—	—	—	—	15,590	97	9	106	Kincardine.
29,738	—	—	—	—	—	—	—	—	8,526	13	56	69	Kinross.
145,123	—	—	—	—	—	—	—	—	55,118	235	79	314	Kirkcudbright.
403,633	—	—	—	—	—	9,322	24,032	—	5,647,547	20,605	6,187	26,792	Lanark.
56,928	—	—	—	—	—	—	3,353	—	1,661,458	5,721	1,715	7,436	Linlithgow.
20,398	—	—	—	—	—	—	17,622	—	10,163	80	10	90	Moray.
3,659	—	—	—	—	—	—	715	—	1,499	10	10	20	Nairn.
279	—	—	—	—	—	—	14,568	—	2,995	24	4	28	Orkney.
25,665	—	—	—	—	—	—	—	—	7,587	26	44	70	Peebles.
146,677	—	—	—	—	—	—	15	1791	45,625	169	67	236	Perth.
143,626	11,231	—	—	—	—	120	—	—	43,113	135	66	201	Renfrew.
8,250	—	—	—	—	—	—	13,941	—	10,039	41	22	63	Ross & Cromarty.
87,409	—	—	—	—	—	—	—	—	18,243	160	—	160	Roxburgh.
16,075	954	—	—	—	—	—	—	—	4,185	20	20	40	Selkirk.
—	—	—	—	—	—	—	—	—	—	—	—	—	Shetland.
150,341	1,349	—	—	—	—	22,334	—	—	1,354,596	4,699	1,664	6,363	Stirling.
16,011	—	—	—	—	—	—	—	—	11,076	45	24	69	Sutherland.
60,256	—	—	—	—	—	—	—	—	12,463	70	31	101	Wigtown.
337,481	321,578	—	—	—	—	33,254	188,322	14,970	19,395,587	71,059	23,329	94,388	*Total.*
85,036	10,192	—	—	‡	—	—	115	11,212	44,486	210	150	360	ISLE OF MAN
869,472	14,693,809	7,393	152,558	2,488,691	17,371	532,437	3,266,175	290,455	162,200,046	675,551	206,155	881,706	**Grand Total.**

‡ Included with Lancashire.

NOTE TO TABLE 2

Note.—The following Minerals were also produced at Mines, Quarries, &c., in Great Britain in addition to those shewn in the preceding Table.

County.	Mineral.	Quantity raised in 1934.
ENGLAND:		Tons.
Bedford ..	Bog Ore	2,004
Cornwall ..	Arsenic (White) and Arsenic Soot ..	185
	China Clay	628,172
	China Stone	47,993
	Mica Clay	7,376
	Tungsten Ore, dressed	190
Derby	Fluorspar	14,929
	Iron Pyrites	189
	Petroleum	29
Devon ..	China Clay	61,957
	Copper Precipitate ..	5
	Mica Clay	694
	Tungsten Ore, dressed	*
Durham ..	Fluorspar	16,055
Gloucester ..	Celestine (Sulphate of Strontium)	9,440
	Fuller's Earth ..	†
Lancaster ..	Iron Pyrites	98
Northampton	Bog Ore	4,926
Somerset ..	Fuller's Earrh ..	†
Surrey	Fuller's Earth ..	†
Sussex	Natural Gas	†
Warwick ..	Iron Pyrites	1,858
Wilts	Iron Ore‡	2,779
York	Alum Shale	2,213
	Fluorspar	3,232
WALES:		
Anglesey ..	Copper Precipitate ..	18
Flint	Zinc Ore, dressed ..	720
Glamorgan ..	Natural Gas	†
Merioneth ..	Gold Ore, dressed ..	501
Montgomery ..	Zinc Ore, dressed ..	8
SCOTLAND:		
Ayr	Alum Clay	61
Dumfries ..	Zinc Ore, dressed ..	260
Edinburgh ..	Oil Shale	159,338
Linlithgow ..	Oil Shale	1,241,437

* Less than ½ ton. † This information is not available for publication.
‡ Used otherwise than for iron-making.

TABLE 3.—*Approximate Quantity of Metal obtainable by Smelting Ores raised in Great Britain during the Years* 1934, 1933 *and* 1932.

NOTE.—In calculating the approximate quantity of metal obtainable the following allowances have been made for losses in smelting: Lead, 5 per cent.; Zinc, 22 per cent. Silver in ore containing less than 3 ozs. of that metal per ton of dressed mineral is ignored, and ½ oz. of silver is assumed to remain in each ton of desilverised pig lead.

Description of Metal.	1934.		1933.		1932.	
	Quantity.	Value at the Average Market Price.	Quantity.	Value at the Average Market Price.	Quantity.	Value at the Average Market Price.
	Tons.	£	Tons.	£	Tons.	£
Copper	14	467	40	1,422	61	2,116
Gold (fine)	(ozs.) *51*	351	(ozs.) *57*	356	(ozs.) *6*	35
Iron	3,176,054	10,572,631*	2,238,516	7,393,886*	2,198,457	7,423,917*
Lead	51,126	558,978	37,749	440,562	31,267	372,468
Silver	(ozs.) *138,974*	12,287	(ozs.) *37,553*	2,841	(ozs.) *16,043*	1,193
Tin	1,999	460,511	1,543	300,261	1,337	181,760
Zinc	347	4,739	3	47	3	41
Total Value ..	—	**11,609,964**	—	**8,139,375**	—	**7,981,530**

* This is calculated on the average declared value of the pig-iron exported.

TABLE 4.—*Tonnage of the Principal Minerals raised at Mines under the Coal Mines Act, and the Total Tonnage of Minerals raised at such Mines and at Mines under the Metalliferous Mines Regulation Acts, in Great Britain* from* 1873.

Note.—For the number and cause of fatal accidents at mines from which this mineral was raised *see* Table 46. Comparative particulars of the number of persons employed are shown in Table 12.

Decennial Period or Year.	Total Quantity of Mineral raised from Mines under the—						
	Coal Mines Act.						Metalliferous Mines Act
	Coal.	Fireclay.	Ironstone.†	Oil Shale.	Other Minerals.	Total.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Annual Average. 1873–1882 ..	138,086,800	1,875,287	11,514,447	712,928	40,209§	152,221,629	4,278,577
Annual Average. 1883–1892 ..	169,921,705	2,079,818	8,634,571	1,835,174	175,239	182,646,507	4,110,068
Annual Average. 1893–1902 ..	203,314,691	2,628,168	7,366,505	2,192,597	288,874	215,790,835	3,637,745
Annual Average. 1903–1912 ..	253,967,596	2,758,318	7,787,910	2,735,153	481,157	267,730,134	3,275,844
Annual Average. 1913–1922 ..	241,081,755	1,910,359	5,201,170	2,875,769	385,593	251,454,646	2,391,993
Annual Average. 1923–1932 ..	233,096,907	1,773,744	2,584,846	2,133,745	431,968	240,021,210	2,365,022
1913	287,411,869	2,585,763	7,709,624	3,280,143	623,954	301,611,353	3,236,490
1919	229,743,128	1,849,690	4,949,944	2,759,165	299,012	239,600,939	2,104,252
1920	229,503,435	1,966,040	4,985,410	2,829,515	352,279	239,636,679	2,334,398
1921‖	163,216,505	1,352,244	1,340,275	1,850,649	282,876	168,042,549	1,035,994
1922	249,584,085	1,643,777	1,854,792	2,586,656	302,386	255,971,696	1,735,291
1923	275,965,702	1,904,207	2,867,144	2,844,816	376,378	283,958,247	2,272,498
1924	267,061,027	1,959,118	2,991,149	2,843,945	446,620	275,301,859	2,260,651
1925	243,146,880	1,966,992	2,899,134	2,458,052	436,268	250,907,326	2,151,492
1926‖	126,230,165	1,253,842	1,212,927	1,959,795	347,456	131,004,185	1,616,634
1927	251,197,384	2,147,072	3,115,120	2,047,263	489,444	258,996,283	2,532,300
1928	237,450,878	1,998,520	3,013,602	2,038,114	442,931	244,944,045	2,599,158
1929	257,887,551	1,915,878	3,552,477	2,023,609	425,409	265,804,924	3,232,393
1930	243,862,100	1,789,088	2,866,601	2,020,510	435,340	250,973,639	2,797,354
1931	219,439,620	1,483,532	1,820,369	1,732,746	433,101	224,909,368	2,048,177
1932	208,727,764	1,319,188	1,509,939	1,368,596	486,738	213,412,225	2,139,563
1933	207,105,847	1,421,339	1,424,864	1,396,988	486,664	211,835,702	2,332,057
1934	220,721,028	1,697,202	2,151,532	1,400,775	551,496	226,522,033	2,627,824

* Including particulars for Ireland up to the year 1921.

† For the total quantity of ironstone and iron ore raised *see* Tables 5 and 36.

‡ The tonnage under the Metalliferous Mines Acts relates in some cases (*e.g.*, tin ore, slate, &c.) to dressed mineral and not the total quantity of rock mined.

§ Average for 8 years only, and so far as particulars were furnished.

‖ The majority of the coal mines were idle during a considerable period of the years 1921 and 1926 owing to protracted disputes. In consequence, employment at iron mines and at certain other mines was reduced.

TABLE 5.—*Tonnage of the Principal Minerals obtained from all Mines,*

Note.—Complete returns from all quarries more than 20 feet deep are only available from the year 1895, when the Reports of the Secretary for Mines and for the period up to 1913 in the General Report on Mines and Quarries for 1913, Tables 1 and 37 also give some details of the principal uses to which a number of the more widely distributed minerals,

Decennial Period or Year.	Coal.	Metalliferous Ores.							
		Iron Ore and Ironstone.	Tin Ore, dressed.	Lead Ore, dressed.	Zinc Ore, dressed.	Tungsten Ore, dressed.	Uranium Ore.	Copper Ore, dressed.	Copper Precipitate.
Annual Average. 1873–1882	138,086,800	16,338,805	14,114	73,357	25,519	30	—	64,733	408
1883–1892	169,921,705	14,315,492	14,432	49,651	24,628	117	—	20,267	342
1893–1902	203,322,846	13,204,252	8,741	34,480	22,182	65	35	7,305	267
1903–1912	253,983,464	14,768,388	7,534	28,076	19,108	254	45	5,023	233
1913–1922	241,109,385	12,317,805	5,716	16,539	8,419	191	111	855	191
1923–1932	233,125,846	9,842,821	3,511	21,942	1,603	39	†	45	129
1923	276,000,560	10,875,211	1,760	12,499	2,124	2	4	—	138
1924	267,118,167	11,050,589	3,547	14,294	2,317	2	20	—	192
1925	243,176,231	10,142,878	4,032	15,578	1,603	1	114	—	148
1926	126,278,521	4,094,386	3,878	19,076	1,944	19	—	155	128
1927	251,232,336	11,206,601	4,321	20,428	2,911	12	—	270	206
1928	237,471,931	11,262,323	4,844	18,771	1,553	96	†	—	104
1929	257,906,802	13,214,943	5,640	23,260	1,811	27	†	13	104
1930	243,881,824	11,627,233	4,146	25,380	1,348	128	—	—	75
1931	219,458,951	7,625,860	920	29,502	409	100	—	—	109
1932	208,733,140	7,328,190	2,025	40,633	8	2	—	12	90
1933	207,112,243	7,461,720	2,337	49,056	9	11	—	—	64
1934	220,726,298	10,586,846	3,224	68,122	988	190	—	—	23

Decennial Period or Year.	Other Minerals—								
						Clay, Shale, etc.			
	Oil Shale.	Salt.	Slate.	Chalk.	Chert and Flint.	Alum Clay and Shale.	China Clay, China Stone, and Potters' Clay (including Ball Clay).	Fireclay.	Mica Clay.
Annual Average. 1873–1882	712,928	2,373,648	†	†	†	6,726‖	Included with "Other Sorts."		
1883–1892	1,835,174	2,160,129	457,107	†	†	3,914			
1893–1902	2,192,597	1,959,089	557,925	4,051,926§	94,370§	3,912			
1903–1912	2,736,700	1,957,897	458,691	4,547,235	66,720	7,925			
1913–1922	2,883,257	1,916,090	217,238	3,257,349	65,738	5,549	809,794	Included with "Other Sorts."	
1923–1932	2,137,320	1,954,164	281,279	5,525,593	139,930	10,670	992,819	2,016,726	26,369
1923	2,860,633	1,868,672	263,668	3,593,354	87,125	15,656	982,321	2,109,513	18,270
1924	2,857,103	2,027,450	287,705	4,402,560	148,279	13,147	1,087,018	2,177,910	23,633
1925	2,464,829	1,916,581	305,763	5,035,350	134,688	11,255	1,114,365	2,229,274	20,834
1926	1,959,795	1,716,467	300,124	4,315,376	119,162	8,260	1,058,249	1,491,648	25,863
1927	2,047,263	1,976,339	298,271	5,765,189	109,697	9,166	1,123,786	2,411,525	31,389
1928	2,038,114	1,931,823	300,251	5,996,041	154,559	8,964	1,037,788	2,261,470	28,395
1929	2,023,609	1,959,362	300,829	6,529,348	138,551	9,344	1,096,790	2,207,651	35,124
1930	2,020,510	2,054,783	260,522	6,712,101	159,836	8,997	981,212	2,028,661	35,537
1931	1,732,746	1,885,252	242,807	6,870,177	174,764	9,797	762,976	1,705,746	23,588
1932	1,368,596	2,204,908	252,854	6,036,431	172,639	12,116	683,682	1,543,860	21,057
1933	1,396,988	2,352,838	272,518	6,483,534	175,643	4,476	776,621	1,683,945	8,151
1934	1,400,775	2,506,062	290,455	7,681,698	161,578	2,274	890,680	2,015,592	8,070

* Including particulars for Ireland up to 1921. † Cannot be stated. ‡ From 1884. § From 1895. ‖ From 1878. ¶ Ganister from which year Silica Sand used as Refractory Material is also included. The latter was previously included with "Gravel

Quarries, and certain other Mineral Workings in Great Britain from* 1873.

Quarries Act, 1894, first became operative. Particulars of certain minerals not included below will be found in previous Parts I and III.
e.g., limestone, igneous rocks, sandstone, gravel and sand, are put.

Other Minerals.										
Gold Ore (Auriferous Quartz).	Manganese Ore.	Arsenic (White) and Arsenic Soot.	Barytes and Witherite.	Celestine (Sulphate of Strontium).	Fluorspar.	Gypsum (including Anhydrite).	Iron Pyrites.	Ochre, Umber, etc.	Decennial Period or Year.	
†	3,362	5,566	19,303	—	445	72,213	40,680	5,904	1873–1882	Annual Average.
3,570	7,162	6,112	24,408	9,604‡	267	126,316	22,322	12,324	1883–1892	
10,252	1,103	4,093	23,819	14,156	1,386	189,159	11,703	13,383	1893–1902	
11,988	8,661	1,781	37,225	14,067	40,211	245,480	10,134	15,209	1903–1912	
648	7,172	2,023	55,926	5,571	44,173	239,825	9,841	11,148	1913–1922	
23	718	1,361	50,449	4,128	36,697	626,365	4,410	9,624	1923–1932	
—	2,021	1,605	43,497	6,346	49,031	317,676	6,908	10,293	.. ..	1923
—	2,457	3,207	54,767	1,450	49,492	371,289	5,569	10,469	.. ..	1924
—	829	2,545	48,681	1,072	39,079	414,302	5,288	11,224	.. ..	1925
—	128	1,666	42,775	820	35,883	465,102	4,239	10,203	.. ..	1926
—	1,509	1,337	46,853	3,090	39,724	506,239	4,890	10,464	..	1927
160	235	1,293	49,901	7,126	46,862	634,645	4,370	10,504	.. ..	1928
70	—	953	57,095	5,329	41,762	966,061	4,371	9,343	.. ..	1929
—	—	579	58,705	5,141	29,788	838,018	5,497	8,623	.. ..	1930
—	—	177	45,580	4,052	19,922	754,895	1,979	7,364	.. ..	1931
**	—	247	56,639	6,852	15,427	995,422	992	7,748	.. ..	1932
135	—	121	66,620	3,862	28,058	985,055	1,132	8,707	.. ..	1933
501	—	185	73,994	9,440	34,216	961,581	2,145	7,393	.. ..	1934

continued.

Gravel and Sand.			Limestone.		Sandstone.			
Other Sorts.	Moulding and Pigbed Sand.	Other Sorts.	Igneous Rocks.	Calcspar.	Other Sorts.	Silica Stone (including Ganister and Silica Sand) used as Refractory Material.¶	Other Sorts.	Decennial Period or Year.	
†	Included in next column.	†	†	Included in next column.	†	Included in next column.	†	1873–1882	Annual Average.
†		†	†		†		†	1883–1892	
13,395,263§		1,612,552§	4,497,702§		11,385,286§		4,971,975§	1893–1902	
14,661,052		2,252,378	6,138,013		12,164,414		4,852,542	1903–1912	
8,415,198		2,277,305	5,509,523		10,469,476	320,633	2,020,897	1913–1922	
13,335,258	600,368	5,613,731	8,593,814	14,394	13,263,048	489,181	2,948,790	1923–1932	
8,500,730	430,605	2,517,354	6,785,201	9,083	11,431,552	591,348	2,282,858	.. ..	1923
10,843,418	648,840	2,922,485	7,468,604	9,306	12,813,471	634,431	2,531,917	.. ..	1924
13,073,940	679,559	3,741,961	8,221,983	12,807	13,060,753	494,293	2,888,741	.. ..	1925
12,918,792	521,031	4,484,251	8,245,729	14,806	11,018,779	337,815	2,984,184	.. ..	1926
14,609,514	695,216	4,992,714	8,467,806	17,516	14,411,483	568,824	3,131,406	.. ..	1927
13,278,243	666,224	5,303,973	8,479,996	16,303	14,108,471	510,901	3,158,879	.. ..	1928
14,271,198	681,810	6,262,248	8,744,388	15,187	14,974,000	549,140	3,051,727	.. ..	1929
15,356,383	651,694	7,900,151	9,639,803	15,975	14,812,120	444,316	3,240,402	.. ..	1930
15,623,902	537,638	9,159,467	10,670,929	17,411	13,699,127	387,938	3,321,018	.. ..	1931
14,876,463	491,065	8,852,709	9,213,697	15,546	12,300,727	372,803	2,896,764	.. ..	1932
18,385,520	571,975	11,049,927	8,795,233	18,472	13,063,332	447,264	2,949,960	.. ..	1933
21,920,280	713,659	13,341,564	8,869,472	22,280	14,671,529	532,437	3,266,175	.. ..	1934

is included throughout. Complete information with respect to other kinds of Silica Stone is available from 1922 only, and Sand." ** Less than ½ ton.

TABLE 6.—*Tonnage and Net Selling Value of Coal Raised in each Colliery District of Great Britain during the Year* 1934.

District.	Total Quantity of Saleable Coal Raised.	Total Net Selling Value at Mines and Quarries.	Average Net Selling Value per ton.		*Total Quantity of Saleable Coal Raised in 1933.*	*Average Net Selling Value per Ton in 1933.*	
ENGLAND & WALES.	Tons.	£	s.	d.	*Tons.*	s.	d.
1. Northumberland	13,831,073	7,543,584	10	10·90	*12,473,749*	*11*	*0·72*
2. Durham	30,590,076	18,343,368	11	11·92	*27,606,127*	*12*	*0·43*
3. Cumberland and Westmorland	1,564,204	1,057,238	13	6·21	*1,420,747*	*13*	*7·04*
4. Lancashire and Cheshire ..	13,758,345	10,620,531	15	5·26	*13,205,019*	*15*	*7·73*
5. Yorkshire, South	28,760,609	17,853,246	12	4·98	*27,018,680*	*12*	*6·91*
6. Yorkshire, West	11,091,992	7,395,642	13	4·02	*10,233,445*	*13*	*7·72*
7. Nottinghamshire	14,308,552	8,792,354	12	3·48	*13,638,408*	*12*	*5·02*
8. Derbyshire, North	11,797,558	7,472,994	12	8·02	*11,238,826*	*12*	*11·27*
9. Derbyshire, South	712,160	464,465	13	0·53	*690,202*	*13*	*1·55*
10. Staffordshire, North	6,261,994	4,339,569	13	10·32	*5,727,049*	*14*	*0·29*
11. Cannock Chase	4,937,890	3,553,772	14	4·73	*4,490,746*	*14*	*8·32*
12. South Staffs. and Worcester..	1,541,583	968,429	12	6·77	*1,445,686*	*12*	*9·27*
13. Leicestershire	2,347 520	1,493,463	12	8·69	*2,240,811*	*12*	*10·54*
14. Warwickshire	5,149,672	3,774,556	14	7·91	*4,710,808*	*14*	*11·32*
15. Shropshire	675,716	488,357	14	5·45	*642,065*	*14*	*3·71*
16. Forest of Dean	1,205,144	789,482	13	1·22	*1,094,037*	*13*	*4·93*
17. Somersetshire	696,359	561,668	16	1·58	*695,286*	*16*	*2·81*
18. Bristol	173,697	146,043	16	9·79	*161,563*	*16*	*8·18*
19. Kent	2,030,491	1,523,438	15	0·07	*1,927,747*	*15*	*1·46*
20. South Wales & Monmouth :—							
Anthracite	6,133,934	6,058,209	19	9·04	*6,127,398*	*20*	*0·78*
Other	29,039,383	19,648,653	13	6·39	*28,227,486*	*13*	*8·83*
21. North Wales	2,785,698	1,795,472	12	10·69	*2,853,017*	*12*	*11·07*
Total	**189,393,650**	**124,684,533**	**13**	**2·00**	*177,868,902*	*13*	*4·43*
SCOTLAND.							
22. Fife, Clackmannan, Kinross and Sutherland*	8,312,481	4,499,859	10	9·92	*7,562,346*	*10*	*1·86*
23. Lothians (Mid and East) and Peebles	4,887,112	2,402,225	9	9·97	*4,784,940*	*9*	*6·89*
24. Lanarkshire, Linlithgow, Stirling, Renfrew and Dumbarton :—							
Anthracite	866,020	739,906	17	1·05	*801,124*	*16*	*10·64*
Other	13,255,932	7,509,599	11	3·96	*12,402,434*	*10*	*10·48*
25. Ayrshire, Dumfries and Argyll*	4,011,103	2,282,415	11	4·57	*3,692,497*	*11*	*2·93*
Total	**31,332,648**	**17,434,004**	**11**	**1·54**	*29,243,341*	*10*	*9·27*
Great Britain	**220,726,298**	**142,118,537**	**12**	**10·53**	—		—
Corresponding figures for 1933 ..	*207,112,243*	*134,646,091*	*13*	*0·27*	*207,112,243*	*13*	*0·27*

* A small quantity of Anthracite was got in these Districts.

Note.—The total quantity of Anthracite raised in Great Britain in 1934 was 7,126,733 tons valued at £6,899,487, as compared with 7,053,043 tons valued at £6,922,884 in 1933.

TABLE 7.—*Number of Wet and Dry Cleaning Plants installed and in use and the Quantity of Cleaned Saleable Coal produced in each Colliery District of Great Britain during the Year* 1934.

(*a*) *Classification according to Colliery District.*

District.	Number of Cleaning Plants in use.*			Quantity of Cleaned Saleable Coal produced.				
	Washeries.	Dry Cleaning.	Froth Flotation.	At Washeries.	By Dry Cleaning Plants.	By Froth Flotation Plants.	Total.	Percentage of Total Output.†
England and Wales.				Tons.	Tons.	Tons.	Tons.	%
1. Northumberland	28	14	—	3,380,348	1,484,155	—	4,864,503	35·2
2. Durham	30	32	—	5,421,581	6,948,280	—	12,369,861	40·4
3. Cumberland and Westmorland	9	—	—	1,024,383	—	—	1,024,383	65·5
4. Lancashire and Cheshire	44	14	1	4,835,864	321,456	16,863	5,174,183	37·6
5. Yorkshire, South	71	16	—	14,522,410	1,497,692	—	16,020,102	55·7
6. Yorkshire, West	38	8	—	4,592,618	566,501	—	5,159,119	46·5
7. Nottinghamshire	44	9	—	5,045,719	405,634	—	5,451,353	38·1
8. Derbyshire, North	29	13	—	3,007,224	338,926	—	3,346,150	28·4
9. Derbyshire, South	1	—	—	7,562	—	—	7,562	1·1
10. Staffordshire, North	15	1	—	2,464,789	25,063	—	2,489,852	39·8
11. Cannock Chase	15	4	—	948,606	52,757	—	1,001,363	20·3
12. South Staffs. and Worcester	5	1	—	532,233	6,579	—	538,812	35·0
13. Leicestershire	—	11	—	—	334,692	—	334,692	14·3
14. Warwickshire	6	14	—	521,519	471,812	—	993,331	19·3
15. Shropshire	1	—	—	11,123	—	—	11,123	1·6
16. Forest of Dean	—	1	—	—	66,051	—	66,051	5·5
17. Somersetshire	1	2	—	7,533	41,750	—	49,283	7·1
18. Bristol	2	—	—	55,390	—	—	55,390	31·9
19. Kent	1	2	—	500,286	303,391	—	803,677	39·6
20. South Wales and Monmouth	106	6	2	10,751,544	596,609	67,192	11,415,345	32·5
21. North Wales	8	2	—	874,786	9,615	—	884,401	31·7
Total	454	150	3	58,505,518	13,470,963	84,055	72,060,536	38·0
Scotland.								
22. Fife, Clackmannan, Kinross and Sutherland	28	—	—	4,321,693	—	—	4,321,693	52·0
23. Lothians (Mid and East) and Peebles	19	—	—	2,446,112	—	—	2,446,112	50·1
24. Lanarkshire, Linlithgow, Stirling, Renfrew and Dumbarton	90	1	2	6,865,218	9,936	51,860	6,927,014	49·1
25. Ayrshire, Dumfries and Argyll	20	—	—	1,702,444	—	—	1,702,444	42·4
Total	157	1	2	15,335,467	9,936	51,860	15,397,263	49·1
Great Britain	**611**	**151**	**5**	**73,840,985**	**13,480,899**	**135,915**	**87,457,799‡**	**39·6**
Corresponding figures for 1933	*604*	*141*	*5*	*66,208,487*	*11,138,807*	*122,904*	*77,470,198*	*37·4*

(*b*) *Classification according to Situation of Plant.*

1. Plants at Mines treating coal from :—								
(*a*) Own Mines	590	149	5	70,317,988	13,248,093	135,915	83,701,996	—
(*b*) Other Owners' Mines				683,401	9,625	—	693,026	—
Total	590	149	5	71,001,389	13,257,718	135,915	84,395,022	—
2. Plants at Coke, &c., Works not situated at Mines	21	2	—	2,839,596	223,181	—	3,062,777	—
Grand Total	**611**	**151**	**5**	**73,840,985**	**13,480,899**	**135,915**	**87,457,799‡**	—

* In addition, there were 43 cleaning plants which were idle during the year. Altogether, cleaning plants were installed at 587 mines and at 22 works not situated at mines.

† In relation to the output of coal which is generally suitable for cleaning, *i.e.*, fine or small coal, the proportion actually so treated is in general considerably higher than is indicated above by the percentage of the total output of coal.

‡ Including 3,563,099 tons of cleaned anthracite of which 2,971,065 tons were produced at plants in South Wales and 592,034 tons at plants in Scotland.

TABLE 8.—*Weekly Tonnage of Coal Raised and Weighed at Pits in the Principal Colliery Districts of Great Britain during the Year* 1934* *and the Number of Wage-earners on Colliery Books.*

Week ended.	Northumberland. (*Tons*).	Durham. (*Tons*).	Yorkshire. (*Tons*).	Lancashire, Cheshire and North Wales. (*Tons*).	Derby, Nottingham and Leicester. (*Tons*).	Stafford, Salop, Worcester and Warwick. (*Tons*).	South Wales and Monmouth. (*Tons*).	Other English Districts. † (*Tons*).	Scotland. (*Tons*).	**Great Britain.** (*Tons*).	Number of Wage-earners on Colliery Books.‡
1934.				**FIRST QUARTER (13 WEEKS ENDED 31st MARCH).**							
Jan. 6 (*a*) ..	178,400	519,100	774,000	298,000	624,000	397,400	756,200	115,400	369,700	**4,032,200**	779,139
13	290,300	687,700	953,700	375,000	672,800	412,700	782,900	128,300	653,600	**4,957,000**	781,651
20	291,300	667,100	933,100	375,700	656,300	401,000	758,000	123,000	657,600	**4,863,100**	784,241
27	292,900	682,500	915,800	371,100	641,700	404,400	721,000	124,600	655,900	**4,809,900**	785,589
Feb. 3	293,400	663,900	793,300	363,800	596,500	400,800	758,200	123,300	655,500	**4,648,700**	787,533
10	294,900	649,200	916,500	369,400	670,400	396,700	761,800	124,700	650,200	**4,833,800**	787,837
17	293,600	659,300	902,400	368,100	643,300	403,700	777,100	123,900	647,000	**4,818,400**	788,942
24	289,900	632,800	906,700	374,400	643,900	411,900	774,800	123,700	645,300	**4,803,400**	790,047
Mar. 3	286,600	634,000	838,700	364,500	633,800	413,800	768,700	125,100	641,100	**4,706,300**	789,578
10	298,200	666,100	921,100	369,300	668,800	411,100	776,200	128,600	641,900	**4,881,300**	789,803
17	291,100	626,600	911,000	372,200	653,700	408,600	769,100	124,300	630,300	**4,786,900**	789,362
24	299,500	646,400	893,200	387,400	634,800	416,500	778,900	123,100	644,900	**4,824,700**	789,133
31 (*b*) ..	217,700	500,500	617,500	294,700	463,600	364,900	734,500	99,400	648,700	**3,941,500**	788,328
Total Output and Average Number of Wage-earners on Colliery Books	3,617,800	8,235,200	11,277,000	4,683,600	8,203,600	5,243,500	9,917,400	1,587,400	8,141,700	**60,907,200**	787,014
				SECOND QUARTER (13 WEEKS ENDED 30th JUNE).							
April 7 (*b*) ..	234,000	510,800	520,800	277,700	410,600	245,000	458,900	93,100	626,200	**3,377,100**	787,533
14	294,600	661,400	911,700	381,900	689,800	416,800	799,700	126,200	638,600	**4,920,700**	786,140
21	299,200	661,700	915,100	362,500	646,000	392,500	737,600	121,500	631,800	**4,767,900**	786,509
28	291,900	635,900	864,500	343,800	570,400	359,200	745,300	119,100	622,000	**4,552,100**	785,659
May 5 (*c*) ..	267,700	624,100	772,800	338,200	503,100	347,300	712,300	112,400	619,300	**4,297,200**	784,590
12	290,700	629,700	791,000	331,200	529,600	356,100	645,700	119,000	604,500	**4,297,500**	782,568
19	295,100	648,400	756,100	339,300	550,000	358,900	747,700	119,700	602,300	**4,417,500**	780,790
26 (*d*) ..	234,500	504,500	372,300	208,900	291,200	179,500	338,000	79,400	607,100	**2,815,400**	777,493
June 2	286,800	616,300	700,700	317,100	493,000	362,100	786,000	112,100	583,600	**4,257,700**	778,479
9	274,100	600,300	716,400	325,900	493,400	346,900	726,000	114,700	522,000	**4,119,700**	775,216
16	293,300	620,200	703,900	302,900	484,100	328,100	722,600	114,500	565,500	**4,135,100**	773,348
23	277,900	603,100	582,200	286,000	467,000	318,400	695,600	111,300	575,100	**3,916,600**	771,731
30	255,900	556,900	607,000	292,800	316,400	336,300	644,000	111,200	574,800	**3,695,300**	768,036
Total Output and Average Number of Wage-earners on Colliery Books	3,595,700	7,873,300	9,214,500	4,108,200	6,444,600	4,347,100	8,759,400	1,454,200	7,772,800	**53,569,800**	779,853

THIRD QUARTER (13 WEEKS ENDED 29th SEPTEMBER).											
July 7	267,700	581,800	717,800	286,900	514,000	307,800	626,600	111,500	592,800	**4,006,900**	766,985
14	275,800	571,200	707,000	209,900	452,400	298,000	643,400	110,400	523,000	**3,791,100**	763,835
21 (*e*) ..	256,200	581,300	677,500	277,600	480,300	305,400	653,100	110,000	152,400	**3,493,800**	764,151
28	282,000	580,700	623,800	289,100	443,200	315,100	719,700	113,300	470,500	**3,837,400**	763,642
Aug. 4	279,800	602,600	688,300	279,900	482,900	324,400	729,600	112,600	584,000	**4,084,100**	759,028
11 (*f*) ..	233,100	488,200	492,300	205,400	270,500	79,900	278,400	68,800	587,800	**2,704,400**	758,623
18	286,700	608,200	733,000	296,000	527,500	338,000	725,800	112,500	603,300	**4,231,000**	759,681
25	288,000	612,500	618,100	297,600	530,700	359,200	745,200	114,800	609,600	**4,175,700**	760,472
Sept. 1	282,400	575,100	653,300	302,600	440,000	369,000	742,300	116,900	616,300	**4,097,900**	761,437
8	292,400	626,300	863,000	312,100	623,700	357,700	735,200	117,100	622,100	**4,549,600**	763,075
15	288,900	607,000	609,600	305,500	579,000	367,300	754,700	119,900	622,400	**4,254,300**	763,820
22	292,300	602,200	839,600	323,800	578,700	361,600	782,400	119,100	609,100	**4,508,800**	765,320
29	286,200	609,100	856,700	315,200	565,300	358,900	799,500	119,800	631,600	**4,542,300**	763,733
Total Output and Average Number of Wage-earners on Colliery Books	3,611,500	7,646,200	9,080,000	3,701,600	6,488,200	4,142,300	8,935,900	1,446,700	7,224,900	**52,277,300**	762,600
FOURTH QUARTER (13 WEEKS ENDED 29th DECEMBER)											
Oct. 6	299,500	625,800	800,700	314,700	552,200	347,600	736,800	121,100	623,100	**4,421,500**	765,466
13	290,700	599,200	800,300	329,200	550,000	353,600	766,200	117,800	640,400	**4,447,400**	766,367
20	287,900	618,300	754,300	311,300	528,700	355,100	744,600	121,000	647,400	**4,368,600**	767,233
27	289,300	629,300	761,500	320,400	546,800	359,200	723,000	119,800	639,300	**4,388,600**	767,188
Nov. 3	286,100	629,700	710,400	320,500	518,300	366,500	721,700	123,300	643,900	**4,320,400**	767,545
10	283,800	620,200	816,900	334,600	620,500	389,700	730,300	124,600	653,100	**4,573,700**	767,691
17	298,100	645,400	851,400	334,200	566,400	388,900	721,400	126,000	645,400	**4,577,200**	767,635
24	281,100	636,200	863,900	338,100	613,800	394,700	734,400	126,400	648,800	**4,637,400**	767,415
Dec. 1	297,800	664,700	812,900	342,100	554,300	400,800	738,700	126,700	650,400	**4,588,400**	766,340
8	295,600	677,000	965,200	344,900	718,900	405,800	758,700	129,500	657,000	**4,952,600**	767,821
15	305,300	692,600	989,800	360,500	698,100	414,000	779,300	134,400	662,600	**5,036,600**	770,000
22	306,100	689,000	957,600	361,900	666,200	424,300	761,500	131,200	653,200	**4,951,000**	770,396
29 (*g*) ..	228,600	501,700	448,100	220,200	330,600	176,800	294,000	62,900	636,000	**2,898,900**	769,261
Total Output and Average Number of Wage-earners on Colliery Books	3,749,900	8,229,100	10,533,000	4,232,600	7,464,800	4,777,000	9,210,600	1,564,700	8,400,600	**58,162,300**	767,720
GRAND TOTAL	**14,574,900**	**31,983,800**	**40,104,500**	**16,726,000**	**28,601,200**	**18,509,900**	**36,823,300**	**6,053,000**	**31,540,000**	**224,916,600**	**774,297**
Corresponding figures for 1933	*13,182,100*	*28,803,900*	*37,733,500*	*16,249,900*	*27,239,600*	*17,033,700*	*35,901,100*	*5,653,800*	*29,531,500*	*211,329,100*	*772,358*

* The period covered does not coincide with the calendar year since it excludes 31st December, 1934 (i.e., Monday).
† Including Cumberland, Westmorland, Gloucester, Somerset and Kent.
‡ Including a small number of wage-earners employed at coal mines in raising or handling minerals other than coal.

(*a*) New Year Holidays. (*b*) Easter Holidays. (*c*) May-Day Holidays. (*d*) Whitsun Holidays. (*e*) Scottish Annual Holidays. (*f*) August Bank Holiday. (*g*) Christmas Holidays.

TABLE 9.—*Output of Coal in the Principal Districts of Great Britain* from* 1873.

Note.—Important disputes affecting the production of coal occurred in the following years and districts, viz.: 1873 and 1875, South Wales; 1879, Durham; 1880, Lancashire; 1892, Durham; 1893 Federated Districts; 1894, Scotland; 1898, South Wales; and in 1914 and 1919, Yorkshire. In 1912, 1920, 1921 and 1926, there were national disputes lasting approximately 6 weeks, 2 to 3 weeks, 3 months and 7 months, respectively

Year.	Northumberland.	Durham.	Yorkshire.	Lancashire, Cheshire and North Wales.	Derby, Nottingham and Leicester.	Stafford, Salop, Worcester and Warwick.	South Wales and Monmouth.	Other English Districts.†	Scotland.	Ireland.	Total Output of Coal.
	Tons.	Tons.	Tons.	Tons	Tons.	Tons.	Tons.	Tons	Tons.	Tons.	Tons.
1873	6,464,061	23,278,556	15,311,778	19,227,051	10,701,020	17,315,242	16,180,728	3,208,192	16,857,772	135,731	128,680,131
1874	6,464,944	24,102,300	14,827,313	18,554,692	11,379,522	15,027,747	16,490,832	2,814,884	16,788,661	139,213	126,590,108
1875	6,755,796	25,568,349	15,860,008	20,968,034	11,626,749	16,531,180	14,173,143	3,097,518	18,597,507	128,201	133,306,485
1876	6,568,911	25,685,183	15,137,373	20,467,818	11,435,300	15,861,052	16,972,284	3,206,438	18,665,612	125,195	134,125,166
1877	5,485,573	25,929,652	15,813,310	20,797,132	11,981,007	15,535,899	16,911,214	3,265,926	18,320,074	140,181	134,179,968
1878	5,254,927	24,877,656	15,589,119	20,902,636	12,417,269	14,966,315	17,417,118	3,227,690	17,837,282	122,051	132,612,063
1879	5,537,071	23,251,903	16,248,156	21,500,621	12,981,483	15,223,401	17,819,043	3,559,785	17,469,927	129,003	133,720,393
1880	6,850,162	28,063,346	17,473,806	22,230,609	13,399,609	15,741,186	21,165,580	3,636,523	18,274,886	133,702	146,969,409
1881	7,074,577	28,517,843	18,294,177	21,952,407	14,412,248	16,883,989	22,234,176	3,864,243	20,823,055	127,585	154,184,300
1882	7,060,783	29,238,814	18,530,331	22,956,776	14,499,583	16,973,241	22,817,378	3,780,160	20,515,134	127,777	156,499,977
1883	7,527,065	29,878,435	19,567,670	23,946,292	15,429,234	17,259,970	24,975,433	3,801,317	21,225,797	126,114	163,737,327
1884	7,516,005	28,552,303	19,224,354	23,394,470	14,825,534	16,468,895	25,552,166	3,914,933	21,186,688	122,431	160,757,779
1885	7,354,776	27,737,324	18,501,684	23,587,218	15,681,960	16,797,221	24,342,856	3,950,758	21,288,586	109,035	159,351,418
1886	7,305,182	27,481,005	19,392,975	23,825,699	15,450,035	15,383,090	24,204,370	3,997,085	20,373,478	105,563	157,518,482
1887	5,658,940	28,858,121	20,108,903	24,213,648	15,758,767	15,925,046	26,046,374	3,958,333	21,484,976	106,704	162,119,812
1888	8,001,828	29,664,892	20,579,960	24,554,526	16,536,209	16,843,976	27,355,250	3,987,570	22,319,104	91,904	169,935,219
1889	8,794,005	30,307,177	21,976,027	25,223,467	18,012,378	17,242,266	28,064,235	3,976,805	23,217,163	103,201	176,916,724
1890	9,446,035	30,265,241	22,338,886	25,776,824	18,773,860	17,134,480	29,415,025	4,083,081	24,278,589	102,267	181,614,288
1891	9,330,859	29,807,523	22,794,057	26,550,803	19,789,172	17,737,619	29,992,810	3,946,436	25,424,166	105,681	185,479,126
1892	9,528,834	23,834,027	23,189,915	25,983,105	19,801,137	17,429,953	31,207,360	3,508,736	27,191,923	111,881	181,786,871
1893	9,112,788	30,819,070	15,955,817	18,682,552	14,415,578	16,105,631	30,154,739	3,491,024	25,482,918	105,678	164,325,795
1894	9,541,199	32,556,924	23,446,184	27,058,385	19,794,139	16,752,428	33,418,344	4,115,764	21,481,554	112,604	188,277,525
1895	8,694,651	31,133,253	22,811,038	25,612,243	19,329,651	16,132,957	33,040,114	3,989,176	28,792,693	125,586	189,661,362
1896	9,027,752	32,762,539	23,943,488	26,279,459	19,915,703	17,069,778	33,867,921	4,038,335	28,326,700	129,585	195,361,260
1897	9,768,459	33,819,068	24,055,380	26,476,028	21,245,398	17,572,090	35,806,390	4,169,088	29,082,996	135,025	202,129,931
1898	10,570,713	34,737,347	25,639,021	28,230,587	23,081,794	18,062,391	26,723,618	4,641,464	30,237,616	129,965	202,054,516
1899	11,184,072	34,870,675	26,907,132	28,303,690	24,708,292	18,369,475	39,870,097	4,613,215	31,142,713	125,420	220,094,781
1900	11,514,521	34,800,719	28,250,679	28,651,932	25,977,987	18,771,905	39,328,209	4,648,445	33,112,204	124,699	225,181,300

1901	11,272,005	33,954,438	26,975,460	27,337,333	25,118,006	17,717,836	39,209,260	4,562,778	32,796,800	103,029	**219,046,945**
1902	11,619,072	34,808,460	27,966,148	28,053,551	26,252,448	18,194,315	41,305,583	4,670,969	34,115,759	108,737	**227,095,042**
1903	12,021,340	35,873,268	28,532,362	28,138,447	25,927,483	18,014,583	42,154,191	4,577,193	34,992,790	102,812	**230,334,469**
1904	12,258,509	36,154,273	28,840,506	27,444,437	26,178,319	17,742,900	43,730,415	4,519,887	35,453,389	105,637	**232,428,272**
1905	12,693,885	37,397,176	29,930,184	27,150,778	27,287,622	18,038,664	43,203,071	4,497,924	35,839,297	90,335	**236,128,936**
1906	13,283,408	38,813,969	32,556,102	28,386,795	29,303,337	18,824,028	47,056,365	4,757,593	37,992,369	93,662	**251,067,628**
1907	13,722,262	40,264,871	35,181,229	30,035,357	32,633,791	20,726,441	49,978,211	5,096,548	40,092,548	99,704	**267,830,962**
1908	13,797,990	40,137,585	34,936,302	27,879,809	30,687,591	19,808,000	50,227,113	4,793,022	39,158,225	103,158	**261,528,795**
1909	14,013,341	41,240,852	35,900,046	27,297,553	30,644,154	19,518,855	50,363,937	4,937,817	39,768,365	89,392	**263,774,312**
1910	13,121,929	39,431,598	38,304,088	27,178,124	31,257,256	20,164,046	48,699,982	4,861,071	41,335,132	79,802	**264,433,028**
1911	14,682,717	41,718,916	39,137,115	27,424,075	31,655,198	20,375,612	50,200,727	4,894,812	41,718,163	84,564	**271,891,899**
1912	13,381,787	37,890,404	38,298,080	26,315,682	30,461,492	19,567,627	50,116,264	4,776,066	39,518,629	90,307	**260,416,338**
1913	14,819,328	41,532,890	43,680,016	28,134,364	33,702,521	20,845,761	56,830,317	5,346,239	42,456,516	82,521	**287,430,473**
1914	12,472,103	37,549,204	39,556,450	26,206,134	31,414,317	20,282,681	53,879,752	5,363,990	38,847,362	92,400	**265,664,393**
1915	11,040,563	33,737,985	40,357,917	24,927,009	31,783,562	19,784,873	50,452,600	5,440,159	35,596,856	84,557	**253,206,081**
1916	11,244,955	33,742,979	40,222,255	24,912,623	32,591,366	19,884,115	52,080,765	5,511,844	36,094,631	89,833	**256,375,366**
1917	10,221,491	30,842,539	40,889,903	25,210,173	33,169,824	19,899,831	48,507,965	5,416,124	34,245,744	95,646	**248,499,240**
1918	9,883,139	28,404,190	35,666,514	22,679,997	30,006,156	17,653,592	46,716,552	4,756,295	31,890,218	92,001	**227,748,654**
1919	10,989,990	31,008,711	32,854,307	22,652,523	29,411,588	18,024,935	47,522,306	4,764,879	32,457,864	92,414	**229,779,517**
1920	11,185,958	30,818,241	36,182,855	21,691,351	29,422,539	17,411,318	46,248,967	4,938,950	31,523,941	107,961	**229,532,081**
1921	8,025,104	21,768,459	28,482,202	14,915,323	20,929,300	12,723,394	30,572,003	3,201,735	22,545,124	88,537	**163,251,181**
1922	13,204,921	34,862,878	42,119,138	20,541,375	30,772,057	17,517,504	50,325,094	4,816,475	35,447,422		**249,606,864**
1923	14,293,756	38,217,862	46,466,855	23,534,764	34,916,672	20,334,149	54,251,587	5,490,512	38,494,403		**276,000,560**
1924	13,660,448	36,689,491	46,568,688	23,235,751	34,189,686	20,255,280	51,085,135	5,243,407	36,190,281		**267,118,167**
1925	11,955,368	31,493,011	45,273,399	20,521,439	32,755,690	18,700,342	44,629,522	4,818,932	33,028,528		**243,176,231**
1926	6,151,696	14,136,418	21,603,465	10,930,507	20,845,470	12,992,255	20,272,572	2,592,383	16,753,755		**126,278,521**
1927	13,505,813	34,603,196	45,938,719	20,551,646	31,471,640	18,968,411	46,256,363	5,338,854	34,597,694		**251,232,336**
1928	12,967,982	34,708,793	43,367,966	18,398,467	30,087,529	17,088,299	43,311,966	5,181,983	32,358,946	‡	**237,471,931**
1929	14,547,425	39,000,694	46,406,074	19,115,155	32,736,789	18,184,439	48,149,613	5,590,749	34,175,864		**257,906,802**
1930	13,137,901	35,862,756	44,560,741	18,298,368	31,990,742	17,649,404	45,107,912	5,615,300	31,658,700		**243,881,824**
1931	12,495,865	30,248,866	40,589,644	17,231,743	30,557,990	16,980,570	37,084,852	5,197,060	29,072,361		**219,458,951**
1932	12,165,752	27,802,275	38,075,279	16,148,982	28,556,122	17,030,505	34,874,302	5,275,534	28,804,389		**208,733,140**
1933	12,473,749	27,606,127	37,252,125	16,058,036	27,808,247	17,016,354	34,354,884	5,299,380	29,243,341		**207,112,243**
1934	13,831,073	30,590,076	39,852,601	16,544,043	29,165,790	18,566,855	35,173,317	5,669,895	31,332,648		**220,726,298**

* Including particulars for Ireland up to the year 1921.

† Including Cumberland, Westmorland, Gloucester and Somerset in each year, Dorset in 1879, Devon in 1881 and 1893, and Kent in 1907 and subsequent years.

‡ The only information available relating to mines situated in the Irish Free State shows that 78,456 tons of coal were produced in 1926, 85,187 tons in 1929, 91,730 tons in 1931, 81,180 tons in 1932, 105,287 tons in 1933, and 111,074 tons in 1934. In Northern Ireland small quantities of coal were raised in 1922, 1924, 1925 and 1926, but the quantities produced cannot be stated.

TABLE 10.—*Output of Metalliferous Ores, Average Percentage of the Mine, Quarry, or Works, in each of the Principal Producing*

Principal Districts of Production.	Output of Mineral.	Average Percentage of Metal in the Mineral.	Net Selling Value of the Mineral at Mine, Quarry, or Works.	
			Total Amount.	Average Per Ton.
	Tons.	%	£	£ s. d.
(a) Iron Ore and Ironstone (clean raw mineral).				
West Coast Hematite (Non-phosphoric) :—				
Cumberland	711,243	53	465,347	0 13 1
Lancashire	101,956	56	76,241	0 14 11
Total ..	813,199	53	541,588	0 13 4
Jurassic Ironstones :—				
(*a*) Lower Lias Ironstone :— North Lincolnshire (Frodingham)	2,472,514	22	298,887	0 2 5
(*b*) Middle Lias Ironstone :— Cleveland (North Yorkshire)	1,641,921	29	470,654	0 5 9
(*c*) Middle Lias Ironstone :— South Lincolnshire, Leicestershire, Northamptonshire and Oxfordshire ..	1,418,911	26	167,788	0 2 4
(*d*) Inferior Oölite (including some Cretaceous) Ironstone :— South Lincolnshire, Northamptonshire and Rutlandshire	3,949,278	32	591,947	0 3 0
Total ..	9,482,624	28	1,529,276	0 3 3
Coal Measure Ironstones (Blackband and Clay-Ironstone) :—				
North Staffordshire	120,304	33		
South Staffordshire	6,397	30		
Scotland	11,474	30		
Other Coalfields	4,788	33		
Total ..	142,963	32	171,312	—
Other Occurrences of Iron Ore (Hematite, Brown Ore, &c.)* ..	148,060	—		
Total Iron Ore and Ironstone	10,586,846	30	2,242,176	0 4 3

* Devonshire, Forest of Dean and Glamorganshire, chiefly the latter.

Metal in the Mineral, and Net Selling Value of the Mineral at Districts of Great Britain during the Year 1934.

Principal Districts of Production.	Output of Mineral.	Average Percentage of Metal in the Mineral.	Net Selling Value of the Mineral at Mine, Quarry, or Works.	
			Total Amount.	Average Per Ton.
	Tons.	%	£	£ s. d.
(b) Copper Precipitate.				
Devonshire (from Open Works) ..	5	53	304	13 4 4
Anglesey (from Open Works) ..	18	60		
Total ..	23	59	304	13 4 4
(c) Gold Ore (dressed).				
Merioneth	501	—	352	0 14 1
(d) Lead Ore (dressed).				
North of England (Cumberland, Durham, Northumberland, Westmorland and Yorkshire) ..	4,125	80	23,141	5 12 2
Midlands (Derbyshire)	40,336	80	237,438	5 17 9
Wales (Flint and Montgomery) ..	21,763	76	124,040	5 14 0
Scotland (Dumfries)	1,898	82	11,918	6 5 7
Total ..	68,122	79	396,537	5 16 5
(e) Tin Ore (dressed).				
Cornwall and Devon:				
From Mines and Quarries ..	2,351·93	68	338,839	144 1 4
,, Foreshores, the Refuse of Dressing Floors, &c. ..	759·30	42	52,616	69 5 11
,, Old Dumps at the Surface of Mines	113·14	57	13,439	118 15 8
Total ..	3,224·37	62	404,894	125 11 6
(f) Tungsten Ore (dressed).				
Cornwall	190·27	69†	23,387	122 18 4
Devon	0·22	68†	19	86 7 3
Total ..	190·49	69†	23,406	122 17 5
(g) Zinc Ore (dressed).				
Wales (Flint and Montgomery) ..	728	45	467	0 12 10
Scotland (Dumfries)	260	47	446	1 14 4
Total ..	988	45	913	0 18 6

† Tungstic Oxide (WO_3).

TABLE 11.—*Number of Persons Employed at Mines, Quarries, &c., in 1920, 1922 to 1925,*

Note.—Prior to 1925, the particulars for coal mines relate to the number of persons "ordinarily employed." Sub- based upon four selected dates. This also applies to metalliferous mines and quarries from 1922 and to that the total number of persons in the lower and upper portions of Section A do not necessarily correspond. For

District.	1913.	1920.	1922.	1923.	1924.	1925.	1927.
	A.—Coal.						
England and Wales.							
1. Northumberland	60,627	62,335	61,138	64,021	64,977	53,545	50,581
2. Durham	165,246	175,170	161,652	174,192	174,756	143,000	130,725
3. Cumberland and Westmorland	10,954	11,656	11,437	11,767	11,957	10,956	11,562
4. Lancashire and Cheshire	107,656	116,609	105,522	106,430	105,575	99,330	90,532
5. Yorkshire, South	96,572	102,407	110,804	116,532	122,582	123,294	124,296
6. Yorkshire, West	63,826	70,202	67,539	70,889	72,744	68,662	64,442
7. Nottinghamshire	40,473	52,825	52,074	55,364	57,360	57,223	57,955
8. Derbyshire, North	55,412	60,244	58,697	60,979	62,413	60,109	56,856
9. Derbyshire, South	4,843	5,634	5,411	5,675	5,706	5,263	4,942
10. Staffordshire, North	30,453	36,897	34,217	34,639	35,550	35,335	33,114
11. Cannock Chase	20,370	25,107	24,560	26,384	26,460	25,796	25,052
12. Staffordshire, South, and Worcestershire.	10,153	9,910	6,231	6,189	6,977	6,456	5,825
13. Leicestershire	10,327	13,131	12,564	12,580	12,556	11,843	11,536
14. Warwickshire	19,137	21,744	22,216	22,063	22,149	20,389	19,483
15. Shropshire	3,578	4,350	4,080	3,977	3,893	3,777	3,479
16. Forest of Dean	6,741	7,818	7,008	7,482	7,682	7,331	6,628
17. Somersetshire	6,211	7,387	5,228	5,671	6,007	5,595	4,376
18. Bristol	2,588	2,607	2,200	2,254	1,667	1,523	1,003
19. Kent	1,134	2,402	1,805	2,116	1,743	1,873	2,795
20. South Wales and Monmouthshire	232,800	271,161	243,015	252,617	250,065	217,809	194,100
21. North Wales	15,881	19,010	17,035	18,202	19,100	17,359	15,596
Total	964,982	1,078,606	1,014,433	1,060,023	1,071,919	976,468	914,878
Scotland.							
22. Fife, Clackmannan, Kinross and Sutherland.	30,776	32,007	29,146	30,936	31,722	28,597	23,634
23. Lothians (Mid and East) and Peebles	13,944	15,678	15,179	15,792	15,925	15,222	13,534
24. Lanarkshire, Linlithgow, Stirling, Renfrew and Dumbarton.	79,128	82,690	74,062	80,108	77,845	66,986	57,651
25. Ayrshire, Dumfries and Argyll	15,576	16,948	15,649	16,431	16,313	15,169	14,189
Total	139,424	147,323	134,036	143,267	141,805	125,974	109,008
Great Britain.							
(i) Wage-earners	1,104,406	1,225,929	1,148,469	1,203,290	1,191,984	1,083,637	1,005,006
(ii) Salaried Persons (including Clerks)					21,740	18,805	18,880
Wage-Earners and Salaried Persons (including Clerks).							
Under 16 years of age	73,069	76,408	59,879	66,807	65,317	51,179	42,048
16 and under 18 years of age						68,506	56,660
18 " 20 " "	1,031,337	1,149,521	1,088,590	1,136,483	1,148,407	62,913	58,575
20 years of age and over						910,417	840,863
Total	1,104,406	1,225,929	1,148,469	1,203,290	1,213,724	1,093,015	998,146
	B.—Other Minerals.						
Iron Ore and Ironstone	126,942	22,783	12,079	16,333	15,167	12,819	11,864
Non-ferrous Metalliferous Ores		84,717	1,976	3,624	4,314	4,508	5,137
Other Minerals			85,478	92,630	96,978	100,666	97,399
(*a*) Mines	49,641	42,208	26,906	32,991	32,528	31,078	29,503
(*b*) Quarries and Other Workings*	77,301	65,292	72,627	79,596	83,931	86,915	84,897
(i) Wage-earners	126,942	107,500	96,045	108,710	112,663	114,057	110,562
(ii) Salaried Persons (incl. Clerks)			3,488	3,877	3,796	3,936	3,838
Total	126,942	107,500	99,533	112,587	116,459	117,993	114,400

* Other workings include brine salt wells and certain other shallow quarries. Particulars in respect of persons

Great Britain, classified according to the Mineral got, in the Years 1913, *and from* 1927.

sequently, the numbers in the main portion of Section A represent the average number of persons on Colliery Books other quarries from 1930 (Section B). Particulars of the ages of coal miners relate to the end of the year only, so further details, *see* Tables 14 and 16.

1928.	1929.	1930.	1931.	1932.	1933.	1934.	District.
			A.—Coal.				
							England and Wales.
46,922	49,496	47,465	43,672	42,425	41,787	43,402	1. Northumberland.
130,155	138,827	133,282	115,164	105,964	102,911	107,873	2. Durham.
10,461	9,776	9,701	8,616	7,044	6,416	6,873	3. Cumberland and Westmorland.
81,366	79,233	75,746	72,492	67,819	65,372	62,327	4. Lancashire and Cheshire.
119,475	119,157	119,268	113,246	106,077	99,741	99,015	5. Yorkshire, South.
56,714	53,588	52,341	51,057	49,353	44,765	44,245	6. Yorkshire, West.
52,114	52,702	52,393	51,307	49,499	46,969	46,852	7. Nottinghamshire.
53,064	53,021	52,722	50,513	48,333	44,591	43,860	8. Derbyshire, North.
4,404	3,921	3,734	3,761	3,684	3,521	3,372	9. Derbyshire, South.
28,834	28,350	26,396	23,762	22,803	22,901	23,144	10. Staffordshire, North.
23,920	23,773	23,159	23,052	23,297	22,998	22,809	11. Cannock Chase.
5,151	4,919	4,725	4,610	4,645	4,513	4,572	12. Staffordshire, South, and Worcestershire.
11,343	11,305	11,079	10,935	10,812	10,312	9,773	13. Leicestershire.
17,765	17,025	17,459	17,601	17,473	17,308	17,136	14. Warwickshire.
3,006	2,827	2,714	2,668	2,750	2,647	2,656	15. Shropshire.
6,038	5,714	5,373	5,139	5,133	5,178	5,263	16. Forest of Dean.
4,233	4,159	3,842	3,700	3,724	3,659	3,577	17. Somersetshire.
985	992	988	896	965	882	923	18. Bristol.
3,553	4,357	5,063	5,678	6,382	6,625	7,088	19. Kent.
168,269	178,315	172,870	158,162	145,709	142,900	139,806	20. South Wales and Monmouthshire.
14,758	15,274	14,407	13,787	13,075	11,494	10,582	21. North Wales.
842,530	856,731	834,727	779,818	736,966	707,490	705,148	Total.
							Scotland.
22,374	23,650	23,124	20,768	19,928	19,911	20,908	22. Fife, Clackmannan, Kinross and Sutherland.
12,581	13,501	13,477	12,679	12,483	12,447	12,390	23. Lothians (Mid and East) and Peebles.
48,891	49,998	48,080	42,825	38,585	37,856	38,712	24. Lanarkshire, Linlithgow, Stirling, Renfrew and Dumbarton.
12,612	12,794	11,968	11,774	11,362	11,387	11,052	25. Ayrshire, Dumfries and Argyll.
96,458	99,943	96,649	88,046	82,358	81,601	83,062	Total.
							Great Britain.
921,260	**939,367**	**914,328**	**851,623**	**803,615**	**773,640**	**772,831**	(i) **Wage-earners.**
17,728	**17,307**	**17,048**	**16,241**	**15,709**	**15,451**	**15,379**	(ii) **Salaried Persons (including Clerks).**
							Wage-Earners and Salaried Persons (including Clerks).
38,729	42,436	36,803	30,998	26,098	24,972	29,055	Under 16 years of age.
52,160	54,498	53,844	51,922	45,196	40,099	36,726	16 and under 18 years of age.
57,042	57,121	52,952	52,143	50,728	50,730	46,424	18 „ „ 20 „ „
775,805	815,746	764,256	724,760	678,466	678,143	672,568	20 years of age and over.
923,736	**969,801**	**907,855**	**859,823**	**800,488**	**793,944**	**784,773**	**Total.**
			B.—Other Minerals.				
11,928	12,884	11,388	7,742	7,017	6,675	7,981	Iron Ore and Ironstone.
5,024	4,904	3,464	1,380	1,565	2,021	3,270	Non-ferrous Metalliferous Ores.
94,676	95,040	90,522	85,856	78,805	78,039	82,245	Other Minerals.
28,346	28,802	25,526	19,095	17,427	18,022	21,276	(*a*) Mines.
83,282	84,026	79,848	75,893	69,960	68,713	72,220	(*b*) Quarries and Other Workings.*
107,781	108,920	101,225	90,931	83,463	82,797	89,326	(i) Wage-earners.
3,847	3,908	4,149	4,057	3,924	3,938	4,170	(ii) Salaried Persons (incl. Clerks).
111,628	**112,828**	**105,374**	**94,988**	**87,387**	**86,735**	**93,496**	**Total.**

employed at such workings are not available for 1913 and 1920. In 1922 they numbered about 5,000.

TABLE 12.—*Number and Sex of Persons Employed Below and Above ground at Mines under* (a) *the Coal Mines Act, and* (b) *the Metalliferous Mines Regulations Acts, in Great Britain* from* 1873.

Note.—For the number and cause of fatal accidents at mines at which these persons were employed *see* Table 46. Comparative particulars of the output of mineral are shown in Table 4.

Decennial Period or Year.	Coal Mines Act.				Metalliferous Mines Acts.				Total under both Acts.
	Below ground.	Above ground.		Total.	Below ground.	Above ground		Total.	
	Males.	Males.	Females.		Males.	Males.	Females.		
Annual Average. 1873–1882 ..	403,281	94,687	5,460	**503,428**	33,256	18,952	3,180	**55,388**	**558,816**
Annual Average. 1883–1892 ..	461,024	106,268	4,427	**571,719**	25,408	15,548	1,525	**42,481**	**614,200**
Annual Average. 1893–1902 ..	588,446	139,166	4,779	**732,391**	19,778	13,267	624	**33,669**	**766,060**
Annual Average. 1903–1912 ..	772,234	179,724	5,890	**957,848**	17,400	11,831	212	**29,443**	**987,291**
Annual Average. 1913–1922 ..	869,927	213,217	8,247	**1,091,391**	11,765	8,026	195	**19,986**	**1,111,377**
Annual Average. 1923–1932 ..	812,298	204,627	4,767	**1,021,692**	8,147	6,036	68	**14,251**	**1,035,943**
1913	909,834	211,483	6,573	**1,127,890**	16,525	10,712	175	**27,412**	**1,155,302**
1919	945,806	236,131	9,376	**1,191,313**	12,327	9,063	271	**21,661**	**1,212,974**
1920	990,359	249,547	8,318	**1,248,224**	12,291	8,818	214	**21,323**	**1,269,547**
1921	918,066	220,103	6,142	**1,144,311**	6,563	5,968	96	**12,627**	**1,156,938**
1922	933,029	223,748	5,977	**1,162,754**	7,071	5,383	72	**12,526**	**1,175,280**
1923	979,785	234,423	6,223	**1,220,431**	9,107	6,564	83	**15,754**	**1,236,185**
1924	979,108	244,785	6,355	**1,230,248**	9,223	6,590	74	**15,887**	**1,246,135**
1925	890,849	221,212	5,767	**1,117,828**	8,967	6,550	76	**15,593**	**1,133,421**
1926:									
March	899,778	222,744	5,687	**1,128,209**	8,866	6,618	76	**15,560**	**1,143,769**
December	753,208	197,618	4,230	**955,056**					**970,616**
1927	824,866	207,751	4,774	**1,037,391**	9,057	6,746	81	**15,884**	**1,053,275**
1928	755,044	192,355	4,233	**951,632**	8,866	6,707	78	**15,651**	**967,283**
1929	772,774	192,901	4,061	**969,736**	9,065	6,544	77	**15,686**	**985,422**
1930	748,657	190,777	4,008	**943,442**	7,704	5,661	52	**13,417**	**956,859**
1931	693,386	180,000	3,755	**877,141**	5,413	4,316	44	**9,773**	**886,914**
1932	652,018	171,889	3,532	**827,439**	5,199	4,069	37	**9,305**	**836,744**
1933	625,260	168,544	3,490	**797,294**	5,491	4,280	36	**9,807**	**807,101**
1934	624,437	169,894	3,368	**797,699**	6,566	5,158	52	**11,776**	**809,475**

* Including particulars for Ireland up to the year 1921.

TABLE 13.—*Number of Persons employed at Mines and Quarries, classified according to Age and Sex, including persons employed at all Mines under the Coal and Metalliferous Mines Regulation Acts and at Quarries under the Quarries Act, and the Number of Mines and Quarries at work in Great Britain in the Year* 1934.

Persons Employed.	Act under which the Safety Regulations are Administered.*				
	Coal Mines Act.	Metalliferous Mines Acts.	Quarries Act.	**Total in 1934.**	*Total in 1933.*
WAGE EARNERS (at 15th December).					
Below ground or Inside Quarries.					
Males :—					
Under 16 years of age	18,039	10	376	**18,425**	*15,575*
16 and under 18 years of age	26,864	49	704	**27,617**	*29,959*
18 ,, ,, 20 ,, ,,	36,046	159	1,215	**37,420**	*41,215*
20 years of age and over	539,943	6,562	41,855	**588,360**	*590,561*
Total at 15th December	620,892	6,780	44,150	**671,822**	*677,310*
,, ,, 15th September	616,056	6,658	44,853	**667,567**	*657,648*
,, ,, 16th June	623,795	6,605	45,490	**675,890**	*669,719*
,, ,, 17th March	637,006	6,220	43,699	**686,925**	*686,641*
Average Numbers Employed Below Ground or Inside Quarries	**624,437**	**6,566**	**44,548**	**675,551**†	*672,830*†
Above ground or Outside Quarries.					
Males :—					
Under 16 years of age	10,713	163	538	**11,414**	*9,957*
16 and under 18 years of age	9,312	197	779	**10,288**	*11,125*
18 ,, ,, 20 ,, ,,	9,618	237	1,259	**11,114**	*11,535*
20 years of age and over	125,596	4,185	19,132	**148,913**	*147,090*
Females :—					
Under 16 years of age	246	1	1	**248**	*201*
16 and under 18 years of age	370	—	—	**370**	*426*
18 ,, ,, 20 ,, ,,	453	5	5	**463**	*523*
20 years of age and over	1,591	12	12	**1,615**	*1,687*
Total at 15th December	157,899	4,800	21,726	**184,425**	*182,544*
,, ,, 15th September	156,460	4,905	21,750	**183,115**	*178,607*
,, ,, 16th June	157,249	4,816	21,837	**183,902**	*180,460*
,, ,, 17th March	158,931	4,504	20,839	**184,274**	*182,505*
Average Numbers Employed Above Ground or Outside Quarries	**157,635**	**4,756**	**21,538**	**183,929**	*181,029*
Total Average Number of Wage Earners	**782,072**	**11,322**	**66,086**	**859,480**	*853,859*
CLERKS AND SALARIED PERSONS (at 15th December).					
Males	14,891	425	3,017	**18,333**	*18,204*
Females	711	34	314	**1,059**	*1,031*
Total at 15th December	15,602	459	3,331	**19,392**	*19,235*
,, ,, 15th September	15,582	468	3,289	**19,339**	*19,158*
,, ,, 16th June	15,628	446	3,265	**19,339**	*19,212*
,, ,, 17th March	15,696	443	3,241	**19,380**	*19,234*
Average Number of Clerks and Salaried Persons	**15,627**	**454**	**3,282**	**19,363**	*19,209*
GRAND TOTAL—WAGE EARNERS AND SALARIED PERSONS (including Clerks) (at 15th December).					
Under 16 years of age	29,230	179	959	**30,368**	*25,953*
16 and under 18 years of age	36,963	252	1,566	**38,781**	*42,040*
18 ,, ,, 20 ,, ,,	46,774	419	2,642	**49,835**	*54,115*
20 years of age and over	681,426	11,189	64,040	**756,655**	*756,981*
Total at 15th December	794,393	12,039	69,207	**875,639**	*879,089*
,, ,, 15th September	788,098	12,031	69,892	**870,021**	*855,413*
,, ,, 16th June	796,672	11,867	70,592	**879,131**	*869,391*
,, ,, 17th March	811,633	11,167	67,779	**890,579**	*888,380*
Average Numbers Employed in 1934	**797,699**	**11,776**	**69,368**	**878,843**	—
Average Numbers Employed in 1933	*797,294*	*9,807*	*65,967*	—	*873,068*
Number of Mines and Quarries at work in 1934	2,123	275	5,171	**7,569**	*7,486*

* In addition 2,863 persons in 1934, and 2,758 persons in 1933, were employed at brine salt wells and other mineral workings to which the Regulation Acts do not apply.

† Including adult females employed inside quarries, viz., 1 in 1934, and 2 in 1933.

Note.—For particulars of the numbers employed classified according to the mineral got *see* Tables 14 and 16.

TABLE 14.—*Number of Persons Employed in and about Coal Mines (including Tramways and in Cleaning Coal) classified according to Age and Sex in each*

Persons Employed.	ENGLAND									
	1. Northumberland.	2. Durham.	3. Cumberland and Westmorland.	4. Lancashire and Cheshire.	5. Yorkshire, South.	6. Yorkshire, West.	7. Nottinghamshire.	8. Derbyshire, North.	9. Derbyshire, South.	10. Staffordshire, North.
WAGE EARNERS (at 15th December).										
Below ground.										
Males:—										
Under 16 years of age	1,174	3,423	121	882	2,699	897	883	862	15	308
16 and under 18 years of age	1,428	4,474	230	1,451	3,433	1,263	1,297	1,449	83	532
18 „ „ 20 „ „	1,661	4,967	330	2,081	4,741	1,850	1,840	1,861	125	936
20 years of age and over	28,832	73,514	4,688	40,943	66,786	30,524	32,106	29,830	2,223	15,255
Total at 15th December	33,095	86,378	5,369	45,357	77,659	34,534	36,126	34,002	2,446	17,031
„ 15th September	32,858	84,314	5,214	44,891	76,827	33,141	36,337	33,742	2,450	17,057
„ 16th June	32,884	85,134	5,363	45,990	78,441	33,067	36,662	34,115	2,620	17,011
„ 17th March	32,657	84,808	5,374	48,441	80,128	35,474	37,287	35,470	2,646	17,461
Average Numbers Employed Below Ground	**32,873**	**85,159**	**5,330**	**46,170**	**78,264**	**34,054**	**36,603**	**34,332**	**2,540**	**17,140**
Above ground.										
Males:—										
Under 16 years of age	867	2,258	125	578	1,391	572	515	737	79	327
16 and under 18 years of age	617	1,634	133	537	1,136	498	456	622	36	311
18 „ „ 20 „ „	649	1,554	85	697	1,213	533	578	556	31	372
20 years of age and over	7,852	15,819	895	11,335	14,793	7,500	7,586	6,715	560	4,483
Females:—										
Under 16 years of age	—	—	—	136	—	—	—	—	—	—
16 and under 18 years of age	—	1	11	229	—	—	—	—	—	—
18 „ „ 20 „ „	1	—	25	277	—	—	—	—	—	—
20 years of age and over	35	68	136	883	13	8	5	9	—	12
Total at 15th December	10,021	21,334	1,410	14,672	18,546	9,111	9,140	8,639	706	5,505
„ 15th September	9,810	20,913	1,414	14,395	18,397	8,921	9,221	8,596	716	5,445
„ 16th June	9,663	20,964	1,444	14,731	18,476	8,896	9,273	8,676	755	5,379
„ 17th March	9,650	20,946	1,444	15,250	18,599	9,256	9,171	8,868	741	5,430
Average Numbers Employed Above Ground	**9,786**	**21,039**	**1,428**	**14,762**	**18,504**	**9,046**	**9,201**	**8,695**	**730**	**5,440**
Total Average Number of Wage Earners	**42,659**	**106,198**	**6,758**	**60,932**	**96,768**	**43,100**	**45,804**	**43,027**	**3,270**	**22,580**
CLERKS AND SALARIED PERSONS (at 15th December).										
Males	697	1,615	103	1,333	2,188	1,107	1,008	814	100	540
Females	57	68	10	54	56	32	43	22	3	36
Total at 15th December	754	1,683	113	1,387	2,244	1,139	1,051	836	103	576
„ 15th September	746	1,669	113	1,376	2,243	1,140	1,049	832	102	562
„ 16th June	741	1,674	115	1,398	2,251	1,146	1,048	829	102	558
„ 17th March	730	1,675	118	1,420	2,249	1,155	1,046	834	101	559
Average Number of Clerks and Salaried Persons	**743**	**1,675**	**115**	**1,395**	**2,247**	**1,145**	**1,048**	**833**	**102**	**564**
GRAND TOTAL.—WAGE EARNERS AND SALARIED PERSONS (including Clerks) (at 15th December).										
Under 16 years of age	2,055	5,703	246	1,617	4,130	1,475	1,419	1,613	94	649
16 and under 18 years of age	2,061	6,149	381	2,256	4,628	1,781	1,785	2,092	121	863
18 „ „ 20 „ „	2,345	6,589	446	3,101	6,063	2,426	2,460	2,444	159	1,348
20 years of age and over	37,409	90,954	5,819	54,442	83,628	39,102	40,653	37,328	2,881	20,252
Total at 15th December	43,870	109,395	6,892	61,416	98,449	44,784	46,317	43,477	3,255	23,112
„ 15th September	43,414	106,896	6,741	60,662	97,467	43,202	46,607	43,170	3,268	23,064
„ 16th June	43,288	107,772	6,922	62,119	99,168	43,109	46,983	43,620	3,477	22,948
„ 17th March	43,037	107,429	6,936	65,111	100,976	45,885	47,504	45,172	3,488	23,450
Average Numbers Employed in 1934	**43,402**	**107,873**	**6,873**	**62,327**	**99,015**	**44,245**	**46,852**	**43,860**	**3,372**	**23,144**
Average Numbers Employed in 1933	*41,787*	*102,911*	*6,416*	*65,372*	*99,741*	*44,765*	*46,969*	*44,591*	*3,521*	*22,901*

Note.—The Table above includes particulars of all persons who were employed in raising or handling coal, or in connexion other minerals when got with coal, *e.g.*, ironstone, fireclay, &c.

those employed on Sidings at the Pits and on Private Branch Railways and Colliery District of Great Britain in the Year 1934.

AND WALES.											SCOTLAND.				GREAT BRITAIN.	
11. Cannock Chase.	12. Staffordshire, South, and Worcestershire.	13. Leicestershire.	14. Warwickshire.	15 Shropshire.	16. Forest of Dean.	17. Somersetshire.	18. Bristol.	19 Kent.	20. South Wales and Monmouthshire.	21. North Wales.	22. Fife, Clackmannan, Kinross and Sutherland.	23. Lothians (Mid and East) and Peebles.	24. Lanarkshire, Linlithgow, Stirling, Renfrew and Dumbarton.	25. Ayrshire, Dumfries and Argyll.	Total in 1934.	*Total in 1933.*
396	36	39	120	50	58	46	2	125	4,714	190	275	163	277	165	**17,920**	*15,211*
528	65	114	218	63	150	77	20	211	7,176	288	481	307	993	357	**26,688**	*29,130*
719	103	241	467	100	249	127	36	271	8,486	373	993	599	1,968	645	**35,769**	*39,574*
15,466	3,182	7,039	11,669	1,931	3,905	2,634	680	5,501	93,408	6,076	14,357	8,245	26,527	7,479	**532,800**	*538,656*
17,109	3,386	7,433	12,474	2,144	4,362	2,884	738	6,108	113,784	6,927	16,106	9,314	29,765	8,646	**613,177**	*622,571*
17,115	3,249	7,456	12,382	2,054	4,310	2,864	743	6,071	115,138	8,564	16,069	9,074	28,520	8,015	**608,455**	*602,622*
17,285	3,293	7,537	12,485	2,113	4,356	2,920	719	5,983	117,168	8,542	15,870	9,289	29,375	8,008	**616,230**	*614,695*
17,366	3,311	7,646	12,543	2,128	4,356	2,951	729	5,864	119,928	8,722	15,674	9,328	30,604	8,606	**629,502**	*635,255*
17,218	**3,310**	**7,518**	**12,471**	**2,110**	**4,346**	**2,905**	**732**	**6,007**	**116,504**	**8,189**	**15,930**	**9,251**	**29,566**	**8,319**	**616,841**	*618,786*
219	21	57	213	21	24	18	5	52	692	126	383	282	829	269	**10,660**	*9,382*
233	41	88	183	13	58	24	4	102	767	114	353	227	881	183	**9,251**	*10,097*
308	48	102	210	20	42	21	8	72	826	118	342	228	775	159	**9,547**	*9,964*
4,350	1,027	1,801	3,683	428	711	514	158	734	18,563	1,578	3,147	2,206	5,739	1,949	**124,126**	*123,692*
—	—	—	—	1	—	—	—	—	—	—	71	7	31	—	**246**	*200*
—	—	—	—	—	—	—	—	—	1	—	76	1	51	—	**370**	*424*
1	—	—	—	—	—	—	—	—	1	—	62	3	83	—	**453**	*517*
7	5	2	7	1	2	2	—	—	41	6	155	17	171	3	**1,588**	*1,663*
5,118	1,142	2,050	4,296	484	837	579	175	960	20,891	1,942	4,589	2,971	8,560	2,563	**156,241**	*155,939*
5,080	1,140	2,026	4,290	482	831	598	167	948	21,083	2,257	4,431	2,877	8,322	2,451	**154,811**	*152,364*
5,071	1,141	2,034	4,166	481	842	588	168	970	21,241	2,259	4,509	2,880	8,596	2,406	**155,609**	*153,822*
5,075	1,144	2,039	4,282	477	848	591	167	950	21,497	2,259	4,440	2,881	8,733	2,562	**157,300**	*157,293*
5,086	**1,142**	**2,037**	**4,259**	**481**	**840**	**589**	**169**	**957**	**21,178**	**2,179**	**4,492**	**2,902**	**8,553**	**2,495**	**155,990**	*154,854*
22,304	**4,452**	**9,555**	**16,730**	**2,591**	**5,186**	**3,494**	**901**	**6,964**	**137,682**	**10,368**	**20,422**	**12,153**	**38,119**	**10,814**	**772,831**	*773,640*
469	110	207	379	65	78	81	21	122	2,066	195	406	207	531	209	**14,651**	*14,741*
37	9	10	27	3	—	2	1	2	41	3	86	28	53	21	**704**	*693*
506	119	217	406	68	78	83	22	124	2,107	198	492	235	584	230	**15,355**	*15,434*
505	121	219	405	64	78	84	22	125	2,122	217	484	234	585	238	**15,335**	*15,376*
506	122	218	407	64	77	84	22	124	2,123	214	480	237	597	242	**15,379**	*15,454*
502	119	218	407	64	76	83	22	124	2,143	226	487	240	607	241	**15,446**	*15,540*
505	**120**	**218**	**406**	**65**	**77**	**83**	**22**	**124**	**2,124**	**214**	**486**	**237**	**593**	**238**	**15,379**	*15,451*
633	60	101	337	73	82	64	7	183	5,415	319	735	457	1,152	436	**29,055**	*24,972*
776	110	209	410	76	210	104	25	318	7,986	415	928	545	1,947	550	**36,726**	*40,099*
1,051	152	350	692	123	292	149	46	349	9,371	499	1,436	849	2,877	807	**46,424**	*50,730*
20,273	4,325	9,040	15,737	2,424	4,693	3,229	857	6,342	114,010	7,834	18,088	10,669	32,933	9,646	**672,568**	*678,143*
22,733	4,647	9,700	17,176	2,696	5,277	3,546	935	7,192	136,782	9,067	21,187	12,520	38,909	11,439	**784,773**	*793,944*
22,700	4,510	9,701	17,077	2,600	5,219	3,546	932	7,144	138,343	11,038	20,984	12,185	37,427	10,704	**778,601**	*770,362*
22,862	4,556	9,789	17,058	2,658	5,275	3,592	909	7,077	140,532	11,015	20,859	12,406	38,568	10,656	**787,218**	*783,971*
22,943	4,574	9,903	17,232	2,669	5,280	3,625	918	6,938	143,568	11,207	20,601	12,449	39,944	11,409	**802,248**	*808,088*
22,809	**4,572**	**9,773**	**17,136**	**2,656**	**5,263**	**3,577**	**923**	**7,088**	**139,806**	**10,582**	**20,908**	**12,390**	**38,712**	**11,052**	**788,210**	—
22,998	*4,513*	*10,312*	*17,308*	*2,647*	*5,178*	*3,659*	*882*	*6,625*	*142,900*	*11,494*	*19,911*	*12,447*	*37,856*	*11,387*	—	*789,091*

therewith, at mines and quarries. In all cases allowance has been made for persons who were employed in raising or handling

TABLE 15.—*Average Weekly and Aggregate Number of Days on which Coal was wound, and on which the Pits were idle, in each District in Great Britain during the Year* 1934.*

DISTRICT.	Average Weekly Number of Days on which the Pits wound Coal or were idle during the four Weeks† ended											Average Weekly Number of Days on which the Pits wound Coal or were idle.		Aggregate Number of Days on which the Pits wound Coal or were idle.	
	27th Jan.	24th Feb.	31st Mar. †	28th April.	26th May.	30th June. †	28th July.	1st Sept. †	29th Sept.	27th Oct.	1st Dec. †	29th Dec.	1934	*1933*	1934	*1933*
ENGLAND AND WALES.	**(a) Number of Days on which the Pits wound Coal.**															
1. Northumberland	5·09	5·45	5·22	5·25	5·08	5·20	5·19	5·16	5·43	5·39	5·46	5·26	**5·27**	*5·05*	**273·79**	*262·52*
2. Durham	5·03	5·08	4·87	4·90	4·78	4·80	4·71	4·73	4·97	4·96	5·08	5·09	**4·91**	*4·65*	**255·52**	*241·60*
3. Cumberland and Westmorland	5·33	5·52	5·25	5·24	5·22	5·41	5·32	5·23	5·51	5·53	5·54	5·12	**5·35**	*5·09*	**278·30**	*264·58*
4. Lancashire and Cheshire	4·72	4·90	4·80	4·62	4·05	4·06	3·54	3·74	4·38	4·46	4·77	4·65	**4·39**	*4·08*	**228·15**	*212·10*
5. Yorkshire, South	4·74	4·65	4·36	4·30	3·67	3·60	3·75	3·45	4·25	4·20	4·23	4·45	**4·12**	*3·98*	**214·45**	*207·21*
6. Yorkshire, West	4·63	4·36	4·14	3·84	3·17	3·22	3·29	3·36	4·25	3·94	4·19	4·29	**3·88**	*3·65*	**201·66**	*189·61*
7. Nottinghamshire	4·67	4·45	4·26	4·13	3·51	3·32	3·62	3·56	4·41	4·04	4·12	4·35	**4·02**	*3·86*	**209·08**	*200·87*
8. Derbyshire, North	4·42	4·21	3·83	3·69	2·87	2·81	3·03	2·82	3·78	3·45	3·78	4·01	**3·54**	*3·42*	**184·01**	*178·05*
9. Derbyshire, South	3·88	3·81	3·73	3·41	2·50	2·43	2·52	2·56	3·52	3·25	3·73	4·14	**3·28**	*3·11*	**170·31**	*161·97*
10. Staffordshire, North	4·98	4·98	4·88	4·59	4·08	4·04	3·62	3·63	4·77	4·79	5·04	4·72	**4·50**	*4·19*	**234·04**	*217·96*
11. Cannock Chase	4·88	4·71	4·75	4·04	3·19	3·36	2·64	2·89	3·72	3·31	4·24	4·31	**3·83**	*3·59*	**199·31**	*186·67*
12. Staffordshire, South and Worcestershire	6·00	5·97	5·95	5·27	5·25	5·84	5·83	5·38	5·83	5·87	6·00	4·99	**5·69**	*5·57*	**295·84**	*289·83*
13. Leicestershire	4·38	4·37	4·21	3·62	2·67	2·53	2·29	2·68	3·30	3·10	3·67	3·98	**3·39**	*3·28*	**176·22**	*170·72*
14. Warwickshire	5·58	5·53	5·49	4·66	4·18	4·84	4·72	4·45	4·91	4·71	5·04	4·58	**4·90**	*4·61*	**254·56**	*239·65*
15. Shropshire	5·75	5·87	5·61	5·31	5·36	5·88	5·79	5·16	5·62	5·89	5·96	5·34	**5·63**	*5·46*	**292·72**	*284·09*
16. Forest of Dean	4·66	4·71	4·56	4·47	4·06	3·71	3·57	3·65	4·46	4·40	4·91	4·54	**4·30**	*3·79*	**223·67**	*197·28*

17. Somersetshire	5·21	5·01	4·99	4·49	4·20	4·35	4·37	4·25	4·73	4·57	5·10	5·11	**4·70**	*4·58*	**244·15**	*237·98*
18. Bristol	5·83	5·83	5·73	5·42	5·06	5·25	5·22	5·12	5·45	5·35	5·83	5·30	**5·45**	*5·39*	**283·46**	*280·29*
19. Kent	5·55	5·41	5·14	5·31	4·83	5·55	5·55	4·95	5·48	5·53	5·53	4·78	**5·30**	*5·24*	**275·63**	*272·31*
20. South Wales and Monmouthshire ..	5·31	5·30	5·22	4·77	4·34	5·11	4·82	4·74	5·49	5·25	5·23	4·73	**5·03**	*4·91*	**261·43**	*255·14*
21. North Wales	5·59	5·65	5·28	5·21	5·28	5·53	5·37	5·21	5·36	5·72	5·69	5·15	**5·42**	*5·20*	**281·85**	*270·47*
England and Wales	4·95	4·93	4·75	4·53	4·07	4·25	4·14	4·09	4·74	4·60	4·76	4·65	**4·53**	*4·33*	**235·64**	*224·94*
SCOTLAND.																
22. Fife, Clackmannan, Kinross and Sutherland	5·20	5·69	5·64	5·57	5·64	5·26	4·14	5·64	5·69	5·59	5·67	5·69	**5·46**	*5·33*	**283·79**	*277·37*
23. Lothians (Mid and East) and Peebles	5·29	5·70	5·59	5·71	5·59	5·54	4·12	5·61	5·64	5·58	5·68	5·38	**5·46**	*5·40*	**284·04**	*280·91*
24. Lanarkshire (including Linlithgow, Stirling, Dumbarton and Renfrew)	5·32	5·80	5·74	5·76	5·47	5·13	4·16	5·78	5·82	5·85	5·80	5·83	**5·54**	*5·31*	**288·27**	*276·33*
25. Ayrshire (including Dumfries and Argyll)	5·34	5·52	5·56	5·48	5·16	4·77	4·59	5·45	5·59	5·97	5·95	5·94	**5·44**	*5·10*	**282·98**	*265·03*
Scotland	5·29	5·72	5·67	5·67	5·49	5·18	4·21	5·67	5·73	5·76	5·77	5·74	**5·50**	*5·31*	**285·85**	*275·88*
GREAT BRITAIN	4·99	5·01	4·85	4·65	4·22	4·35	4·15	4·26	4·84	4·72	4·87	4·77	**4·64**	*4·43*	**240·99**	*230·26*

(b) Number of Days on which the Pits were idle.

Average Weekly Number of Coal-winding Days lost through :—																
Holidays	0·17	0·00	0·17	0·35	0·50	0·04	0·20	0·35	0·05	0·01	0·00	0·47	**0·19**	*0·19*	**9·87**	*9·79*
Disputes	0·01	0·00	0·01	0·01	0·01	0·01	0·01	0·01	0·00	0·01	0·01	0·01	**0·01**	*0·01*	**0·39**	*0·75*
Want of Trade	0·56	0·73	0·72	0·73	1·03	1·34	1·40	1·12	0·85	1·01	0·86	0·44	**0·91**	*1·12*	**47·12**	*58·26*
Accidents to Men and Machinery ..	0·02	0·02	0·02	0·03	0·02	0·02	0·02	0·03	0·03	0·02	0·03	0·03	**0·02**	*0·02*	**1·18**	*1·18*
Other Causes‡	0·04	0·03	0·02	0·02	0·01	0·03	0·01	0·02	0·02	0·02	0·02	0·07	**0·02**	*0·02*	**1·29**	*1·03*
Total Number of Coal-winding Days§ ..	5·79	5·79	5·79	5·79	5·79	5·79	5·79	5·79	5·79	5·79	5·79	5·79	**5·79**	*5·79*	**300·84**	*301·27*

* The period covered does not coincide with the calendar year 1934, since it excludes 31st December, 1934 (*i.e.*, Monday).
† The periods indicated by a † cover five weeks. ‡ Transport difficulties, pit meetings, weather, etc.
§ The time accounted for represents the total possible coal-winding time amounting on the average to 5½ days per week throughout the year. The remaining ½ day is accounted for by the ordinary stop or idle days, including the Saturday afternoon shift. It is not necessarily implied that all the persons employed worked every day coal was wound.

TABLE 16.—*Number of Persons Employed at Mines, Quarries, &c. (except those producing Coal) in Great Britain during the Year 1934, classified according to Age and Sex and the Kind of Mineral got.*

Note.—Persons employed at Quarries which are less than 20 feet deep are not included except at those producing metalliferous ores (chiefly Jurassic ironstone other than in Cleveland) and certain other minerals of special importance, which are included under "Other Minerals," *e.g.*, Fluorspar, Barytes, Celestine and Bog Ore, etc. (*see also* footnote (*) on page 37).

Persons Employed.	Iron Ore and Ironstone.					Non-Ferrous Metalliferous Minerals.			All Other Minerals.												Total in 1934.	Total in 1933.
	West Coast Hematite (Non-Phosphoric).	Jurassic. Cleveland.	Jurassic. Other Sorts.	Other Occurrences (including Coal Measures).	Total.	Tin Ore and Arsenic Compounds.	Lead and Zinc Ores.	Total (including other minerals).*	Chalk, Chert and Flint.	China Clay, China Stone, Mica Clay and Potters' Clay (including Ball Clay).	Clay, Shale, etc.	Fireclay, Moulding and Pig-bed Sand, and Silica Stone (including Ganister and Silica Sand) used as Refractory Material.	Gravel and Sand.	Igneous Rocks.	Limestone.	Oil Shale.	Sandstone.	Slate.	Other Minerals.†	Total.		
WAGE EARNERS (at 15th December). *Below ground or Inside Quarries.* Males :—																						
Under 16 years of age ..	—	52	18	5	75	3	1	4	3	69	35	48	55	68	79	18	39	8	4	426	**505**	*364*
16 and under 18 years of age	5	48	28	8	89	16	2	19	13	63	142	86	119	126	121	44	70	24	13	821	**929**	*829*
18 " " 20 " "	15	59	49	15	138	45	24	71	33	90	266	130	191	212	217	88	104	69	42	1,442	**1,651**	*1,641*
20 years of age and over " ..	1,363	1,887	1,992	447	5,689	719	810	1,626	1,400	2,116	7,477	3,740	4,789	7,750	9,924	1,433	4,022	4,099	1,495	48,245	**55,560**	*51,905*
Total at 15th December ..	1,383	2,046	2,087	475	5,991	783	837	1,720	1,449	2,338	7,920	4,004	5,154	8,156	10,341	1,583	4,235	4,200	1,554	50,934	**58,645**	*54,739*
" " 15th September ..	1,416	2,048	2,131	483	6,078	703	894	1,674	1,481	2,265	7,437	3,931	5,394	9,246	10,122	1,549	4,310	4,114	1,511	51,360	**59,112**	*55,026*
" " 16th June	1,450	2,090	2,061	427	6,028	623	834	1,515	1,473	2,206	7,393	3,864	5,548	9,450	10,457	1,565	4,520	4,170	1,471	52,117	**59,660**	*55,024*
" " 17th March	1,325	2,160	2,035	353	5,873	564	764	1,366	1,464	2,220	7,575	3,735	5,243	8,674	9,975	1,598	4,144	4,141	1,415	50,184	**57,423**	*51,386*
Average Numbers Employed Below Ground or Inside Quarries	**1,394**	**2,086**	**2,078**	**435**	**5,993**	**668**	**832**	**1,568**	**1,467**	**2,257**	**7,581**	**3,883**	**5,335**	**8,882**	**10,224**	**1,574**	**4,302**	**4,156**	**1,488**	**51,149**	**58,710‡**	*54,044‡*
Above ground or Outside Quarries. Males :—																						
Under 16 years of age ..	33	20	6	2	61	33	16	54	2	36	31	35	31	75	101	3	85	224	51	674	**789**	*607*
16 and under 18 years of age	27	18	16	3	64	59	13	79	5	36	40	37	75	139	132	11	97	320	65	957	**1,100**	*1,080*
18 " " 20 " "	22	9	38	6	75	74	34	113	11	40	96	60	109	271	270	23	172	310	94	1,456	**1,644**	*1,653*
20 years of age and over ..	451	366	553	156	1,526	897	336	1,321	354	1,319	1,046	849	1,322	4,427	4,246	265	3,258	4,576	2,733	24,395	**27,242**	*25,784*
Females	1	—	1	1	3	11	1	16	—	—	5	2	2	3	5	1	1	2	63	84	**103**	*91*
Total at 15th December ..	534	413	614	168	1,729	1,074	400	1,583	372	1,431	1,218	983	1,539	4,915	4,754	303	3,613	5,432	3,006	27,566	**30,878§**	*29,215*
" " 15th September ..	579	417	578	168	1,742	1,063	499	1,680	362	1,461	1,142	988	1,539	5,179	4,581	294	3,583	5,456	2,986	27,571	**30,993**	*28,821*
" " 16th June	576	429	627	145	1,777	981	523	1,554	363	1,400	1,106	987	1,576	5,261	4,690	297	3,521	5,443	3,030	27,674	**31,005**	*29,183*
" " 17th March	542	436	571	132	1,681	789	542	1,385	351	1,329	1,124	946	1,416	4,789	4,647	300	3,373	5,265	2,983	26,523	**29,589**	*27,791*
Average Numbers Employed Above Ground or Outside Quarries	**557**	**424**	**597**	**154**	**1,732**	**977**	**491**	**1,551**	**362**	**1,405**	**1,148**	**976**	**1,517**	**5,036**	**4,668**	**298**	**3,523**	**5,399**	**3,001**	**27,333**	**30,616**	*28,753*
Total Average Number of Wage Earners	**1,951**	**2,510**	**2,675**	**589**	**7,725**	**1,645**	**1,323**	**3,119**	**1,829**	**3,662**	**8,729**	**4,859**	**6,852**	**13,918**	**14,892**	**1,872**	**7,825**	**9,555**	**4,489**	**78,482**	**89,326**	*82,797*

CLERKS AND SALARIED PERSONS (at 15th December).																					
Males	57	66	108	24	255	64	64	142	98	94	418	180	515	546	735	32	368	247	222	3,455	**3,852**	*3,620*
Females	2	—	2	—	4	6	6	12	8	14	25	11	78	80	76	1	38	4	23	358	**374**	*356*
Total at 15th December ..	59	66	110	24	259	70	70	154	106	108	443	191	593	626	811	33	406	251	245	3,813	**4,226**	*3,976*
„ „ 15th September ..	60	67	110	25	262	61	88	162	100	108	421	191	588	641	792	33	402	248	243	3,767	**4,191**	*3,957*
„ „ 16th June	60	65	99	24	248	55	85	147	99	108	420	191	578	637	799	33	400	248	237	3,750	**4,145**	*3,938*
„ „ 17th March	62	63	106	24	255	52	81	139	99	107	427	193	568	622	790	35	393	250	238	3,722	**4,116**	*3,881*
Average Number of Clerks and Salaried Persons	**60**	**65**	**107**	**24**	**256**	**60**	**81**	**151**	**101**	**108**	**427**	**192**	**582**	**631**	**798**	**34**	**400**	**249**	**241**	**3,763**	**4,170**	*3,938*
GRAND TOTAL — WAGE EARNERS AND SALARIED PERSONS (including Clerks) (at 15th December).																					
Under 16 years of age ..	33	73	25	7	138	37	18	61	5	108	73	88	99	148	192	21	127	233	59	1,153	**1,352**	*1,015*
16 and under 18 years of age ..	32	66	44	11	153	76	17	101	18	100	186	127	221	280	278	55	175	345	88	1,873	**2,127**	*2,065*
18 „ „ 20 „ „ ..	40	70	94	21	225	124	62	196	51	133	377	193	342	515	532	111	294	381	148	3,077	**3,498**	*3,477*
20 years of age and over ..	1,871	2,316	2,648	628	7,463	1,690	1,210	3,099	1,853	3,536	8,945	4,770	6,624	12,754	14,904	1,732	7,658	8,924	4,510	76,210	**86,772**	*81,433*
Total at 15th December ..	1,976	2,525	2,811	667	7,979	1,927	1,307	3,457	1,927	3,877	9,581	5,178	7,286	13,697	15,906	1,919	8,254	9,883	4,805	82,313	**93,749**	*87,930*
„ „ 15th September ..	2,055	2,532	2,819	676	8,082	1,827	1,481	3,516	1,943	3,834	9,000	5,110	7,521	15,066	15,495	1,876	8,295	9,818	4,740	82,698	**94,296**	*87,804*
„ „ 16th June	2,086	2,584	2,787	596	8,053	1,659	1,442	3,216	1,935	3,714	8,919	5,042	7,702	15,348	15,946	1,895	8,441	9,861	4,738	83,541	**94,810**	*88,145*
„ „ 17th March	1,929	2,659	2,712	509	7,809	1,405	1,387	2,890	1,914	3,656	9,126	4,874	7,227	14,085	15,412	1,933	7,910	9,656	4,636	80,429	**91,128**	*83,058*
Average Numbers Employed in 1934—At Mines	2,011	2,575	345	610	5,541	1,446	1,404	3,006	62	389	795	3,535	2	25	611	1,906	252	3,167	1,985	12,729	**21,276**	*18,022*
At Quarries, etc. ..	—	—	2,437	3	2,440	259	—	264	1,868	3,381	8,361	1,516	7,432	14,524	15,079	—	7,973	6,637	2,745	69,516	**72,220**	*68,713*
TOTAL	**2,011**	**2,575**	**2,782**	**613**	**7,981**	**1,705**	**1,404**	**3,270**	**1,930**	**3,770**	**9,156**	**5,051**	**7,434**	**14,549**	**15,690**	**1,906**	**8,225**	**9,804**	**4,730**	**82,245**	**93,496**	—
Total in 1933.. ..	*1,697*	*1,882*	*2,549*	*547*	*6,675*	*965*	*1,031*	*2,021*	*1,874*	*3,262*	*8,259*	*4,491*	*6,819*	*14,658*	*15,055*	*1,894*	*7,856*	*9,340*	*4,531*	*78,039*	—	*86,735*

* The other minerals included are Copper Precipitate and Ores of Copper, Gold and Tungsten.

† Including Alum Clay and Shale, Barytes and Witherite, Bog Ore, Calcspar, Celestine (Sulphate of Strontium), Fluorspar, Fuller's Earth, Gypsum (including Anhydrite), Iron Pyrites, Ochre, Umber, etc., and Salt.

‡ *See* Note † to Table 13.

§ Dressers or Grinders: These figures include 9,804 male and 3 female dressers or grinders employed at the 15th December, 1934. They were chiefly employed as follows:—

At mines, quarries, etc., producing	Number employed.	At mines, quarries, etc., producing	Number employed.
Tin Ore and Arsenic Compounds	439	Limestone	1,113
Lead and Zinc Ores	172	Sandstone	1,899
Gypsum (including Anhydrite) ..	120	Slate	3,465
Igneous Rocks	2,334		

TABLE 17.—*Number of Persons Employed and Output of Minerals at Quarries under the Quarries Act,* 1894, *in Great Britain* from* 1895.

Note.—For the number and cause of fatal accidents at the quarries at which these persons were employed *see* Table 51.

Decennial Period or Year.	Persons employed.			Output.‡
	Inside.	Outside.	Total.	
				Tons.
Annual Average. 1895–1904..	60,399	45,023†	105,422	40,483,641
Annual Average. 1905–1914..	54,063	31,134	85,197	45,656,426
Annual Average. 1915–1924..	39,027	22,306	61,333	35,807,486
Annual Average. 1925–1934..	48,284	27,640	75,924	62,492,171
1919	36,879	20,197	57,076	31,136,124
1920	43,544	24,206	67,750	39,821,882
1921	44,017	25,962	69,979	31,266,998
1922	41,903	25,586	67,489	33,691,116
1923	46,727	27,711	74,438	42,939,206
1924	50,035	29,393	79,428	49,309,910
1925	53,160	29,558	82,718	54,154,523
1926	52,391	29,442	81,833	48,110,485
1927	51,747	29,945	81,692	60,080,984
1928	50,963	29,003	79,966	59,042,320
1929	51,582	29,195	80,777	63,871,783
1930	47,928	28,737	76,665	66,785,114
1931	45,936	27,176	73,112	65,775,648
1932	42,506	24,637	67,143	60,597,664
1933	42,079	23,888	65,967	67,488,732
1934	44,548	24,820	69,368	79,014,456

* Including particulars for Ireland up to the year 1921.

† In 1899 a large number of workers employed outside quarries under the Quarries Act were transferred from the jurisdiction of the Mines to the Factory Department of the Home Office.

‡ The tonnage relates to dressed mineral in some cases (*e.g.*, slate) and not the total quantity of rock quarried.

TABLE 18.—*Percentages payable in excess of the Basis Wage Rates in each District during the Year* 1934.

Note.—These percentages take no account of subsistence allowances to low-paid day-wage workers, for particulars of which *see* Table 20; nor do they include percentage additions paid to piece-workers in certain districts (*see* Table 19) where the hours of labour during 1934 were less than they were prior to 16th July, 1919.

The *minimum* percentage additions to basis wage-rates payable in each district during the year are shown in Table 19.

District.	Date when Basis Rates were fixed.	Percentages on Basis actually paid in											
		January.	February.	March.	April	May.	June.	July.	August.	September.	October.	November.	December.
Northumberland	1879	40·00	40·00	40·00	40·00	40·00	40·00	40·00	40·00	40·00	40·00	40·00	40·00
Durham	1879	65·00	65·00	65·00	65·00	65·00	65·00	65·00	65·00	65·00	65·00	65·00	65·00
Cumberland	1915	22·50	22·50	22·50	22·50	22·50	22·50	22·50	22·50	22·50	22·50	22·50	22·50
Lancashire and Cheshire ..	1911	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00
Yorkshire*	1911	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00
Nottinghamshire	1911	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00
North Derbyshire	1911	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00
South Derbyshire	1911	29·00	29·00	29·00	29·00	29·00	29·00	29·00	29·00	29·00	29·00	29·00	29·00
North Staffordshire	1911	35·00	35·00	35·00	38·00	37·00	35·00	35·00	35·00	35·00	35·00	35·00	35·00
Cannock Chase	1911	40·00	40·00	40·00	40·00	40·00	40·00	40·00	40·00	40·00	40·00	40·00	40·00
South Staffordshire and Worcestershire	1911	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00	38·00
Leicestershire	1911	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00
Warwickshire†	1911	43·00	43·00	43·00	43·00	43·00	43·00	43·00	44·00	46·00	46·00	45·00	46·00
Forest of Dean	1919	68·75	68·75	68·75	68·75	68·75	68·75	68·75	68·75	68·75	68·75	68·75	68·75
Somerset—Radstock	1918	31·50	31·50	31·50	31·50	31·50	31·50	31·50	31·50	31·50	31·50	31·50	31·50
Newbury	1918	26·00	26·00	26·00	26·00	26·00	26·00	26·00	26·00	26·00	26·00	26·00	26·00
Bristol—East Bristol:													
Hewers	1917	15·00	15·00	15·00	15·00	15·00	15·00	15·00	15·00	15·00	15·00	15·00	15·00
Others	1917	17·00	17·00	17·00	17·00	17·00	17·00	17·00	17·00	17·00	17·00	17·00	17·00
Coalpit Heath:													
Hewers	1917	25·00	25·00	25·00	25·00	25·00	25·00	25·00	25·00	25·00	25·00	25·00	25·00
Others	1917	27·00	27·00	27·00	27·00	27·00	27·00	27·00	27·00	27·00	27·00	27·00	27·00
Kent‡	1911	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00	32·00
South Wales and Monmouthshire	1915	20·00	20·00	20·00	20·00	20·00	20·00	20·00	20·00	20·00	22·50	22·50	22·50
North Wales	1911	22·00	22·00	22·00	22·00	22·00	22·00	22·00	22·00	22·00	22·00	22·00	22·00
Scotland	1888	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00

* The percentage additions paid throughout the year for surface workers in West Yorkshire were 30·33 per cent. in the Eastern Sub-Division and 27 per cent. in the Western Sub-Division.

† At certain collieries lower percentages were payable.

‡ The percentage addition paid throughout the year for underground workers receiving a base wage of 6*s.* or lower, and for surface workers receiving a base wage of 4*s.* 9*d.* or lower was 37 per cent.

Note.—In Shropshire there is no percentage applying to the whole of the district, individual arrangements being made at each colliery.

TABLE 19.—*Main Provisions of the District Wages Agreements in Operation during the Year* 1934.

Note.—For particulars of the percentages actually paid on basis rates during each month of the year and of subsistence wages, *see* Tables 18 and 20, respectively.

District.	Ratio of Wages: Profits.	Basis Rates for Piece-workers increased by	Minimum Percentage addition to Basis Rates.	Period covered by the Ascertainment.	Hours.		Deficiencies.
					Underground. (N.B.—Figures in parenthesis relate to Saturday.)	Surface Workers handling Coal, exclusive of Mealtimes. (The hours of other Surface Workers were not necessarily the same.)	
		Per cent.		Months.	Per Shift.	Per Week.	
Northumberland	87 : 13	—	40	1	Hewers : 7½ (7½ in alternate weeks) Others : 7½ (7½)	49	Carried forward.
Durham	87 : 13	—	65	1	7½*	49	Carried forward.
Cumberland	85 : 15	—	22·5	1	7½ (6½)	49	Carried forward.
Lancashire and Cheshire :—							
To 8th July	87: 13 Standard	—	32	3	7½ (6½)	49	Carried forward, but not beyond corresponding ascertainment in the following year. Cancelled at end of April in each year.
From 9th July	87 : 13 Surplus 86 : 14						
Yorkshire :—							
South	85 : 15	6·1	32	1	7½ (6 to 7)	48	Carried forward.
West	85 : 15	6·1	Below ground, 32; Above ground, Eastern Sub-Div., 30·33; Western Sub-Div., 27	1	7½ (6 to 7)	48 to 49	Carried forward.
Nottinghamshire	85 : 15	7	38	3	7½ (usually ½ or ¾ shift)	The same hours as underground workers.	Cancelled at end of April in each year.
North Derbyshire	85 : 15	7	38	3	7½ (usually ¾ shift)		
South Derbyshire	85 : 15	2	29 (Enginemen, Firemen and Mechanics, 35 and boys, 45)	3	7½ (¾ day)	46 h. 7m.	Cancelled at end of April in each year when outstanding more than 12 months, 40 per cent. of any surplus after payment of wages at 40 per cent. above basis rates to be applied for recoupment.
North Staffordshire	86 : 14	4·25	35	3	7½ (6)	48	Carried forward. One-third of any surplus to be applied for recoupment From 1st July, one-third carried forward and one-third of any surplus to be applied for recoupment.

Cannock Chase	85 : 15	5	40 (Mechanics and other surface workers not handling coal, 42)	2	7½ (¾ day)	46 (including mealtimes)	Carried forward.
South Staffordshire†	—	5	38	—	7½ (7½)	—	—
Leicestershire	85 : 15	7·1	32	12	7½ (5)	44h. 25m. (including mealtimes)	Carried forward, but not beyond corresponding ascertainment in the following year.
Warwickshire	85 : 15	6	43	12	7½ (5½)	46½ to 49	Carried forward but not beyond 12 months.
Salop†	—	—	—	—	7½ (5¾)	44 to 49	—
Forest of Dean	Standard 100 : 15 Surplus 85 : 15	—	68·75	3	7½ (7½)	45 (including mealtimes)	Carried forward.
Somersetshire†	—	—	31·5	—	7½ (7½)	49½	—
Bristol†:—							
East Bristol	—	—	Hewers and Pieceworkers 15 Others 17	—	7½ (7)	49 or 49¼	—
Coalpit Heath	—	—	Hewers and Pieceworkers 25 Others 27	—	8 bank to bank (7 bank to bank)	49 (average)	—
Kent	Ratio proportioned in accordance with an agreed formula.	—	Lower Paid Men 37 Others 32	3	7½ (6 or 6½)	48¾	Carried forward but one eighth of total deficiency cancelled at end of each quarter.
South Wales and Monmouthshire	85 : 15	—	20 (From 1st October, 22·5)	3	7½ (7½)	8 hours per day, mealtimes to be arranged at each colliery	Carried forward. One third of any surplus to be applied for recoupment
North Wales	84 : 16	—	22	3	7⅝ (6½)	44 (including mealtimes)	Carried forward.
Scotland	85 : 15	—	100	2	7½ (7½)	48	Carried forward.

* 6½ hrs. or 7½ hrs. bank to bank for hewers and fillers on Saturdays; other classes on Saturdays 6½ hrs. or 7½ hrs. bank to bank or 7½ hours plus one winding time. The hours vary according to the arrangements at the different collieries. At most of the collieries, hewers, fillers, etc., work only 11 shifts per fortnight; but other workers at all collieries work 12 shifts per fortnight, if required.

† No agreement applying to the whole district is in force, but the figures shown represent the conditions normally observed.

TABLE 20.—*Subsistence Wages paid during*

Note.—Except where otherwise stated, the rates apply to underground and

District.	Rate of Subsistence Wages.
Northumberland ..	6*s.* 9½*d.* per day.
Durham	6*s.* 6½*d.* per day.
Cumberland	*Men 21 years of age and over.* 6*s.* 10*d.* per shift, raised to 7*s.* 1*d.* on 11th June. *Men 18 years of age and under 21.* 6*s.* 6*d.* per shift, subject to a maximum addition of 6*d.* per shift, raised to 6*s.* 8·85*d.* and 8·85*d.*, respectively, on 11th June. *Women,* 3*s.* 8*d.* per shift, raised to 3*s.* 9·61*d.* on 11th June.
Lancashire and Cheshire	*Workers 21 years of age and over.* An allowance not exceeding 1*s.* per shift to make up to 7*s.* 9*d.* per shift, subject to a minimum of 7*s.* for men and 4*s.* 9*d.* per shift for women. *Workers 18 years of age and under 21.* An allowance not exceeding 9*d.* per shift to make up to 7*s.* per shift. *Workers 16 years of age and under 18.* An allowance not exceeding 6*d.* per shift to make up to 5*s.* per shift.
Yorkshire	An allowance of 6*d.* per shift, provided the gross daily wage does not exceed 8*s.* 9*d.* per shift.
Nottinghamshire Derbyshire, North	An allowance of 6*d.* per shift, subject to a maximum of 8*s.* 9*d.* per shift, and a minimum of 7*s.* 11*d.* per shift.
Derbyshire, South ..	Underground workers— 7*s.* 7*d.* per shift. Surface workers— 7*s.* 3*d.* per shift.
Staffordshire, North ..	*From 1st January,* the rates are the same as in Lancashire and Cheshire, except that no subsistence wage is prescribed for women. *From 1st July,* the subsistence rates were merged with the basis rates.
Cannock Chase ..	An allowance of 6*d* per shift, provided the gross daily wage does not exceed 8*s.* 9*d.* per shift.
Staffordshire, South and Worcester.	6*s.* 2*d.* per shift.
Leicestershire.. ..	An allowance of not more than 6*d.* per shift, subject to a maximum of 8*s.* 3*d.* per shift, and a minimum of 7*s* 6*d.* for underground workers, and 7*s.* 2*d.* per shift for surface workers.
Warwickshire.. ..	Underground workers— 8*s.* 3*d.* per shift, except in the case of three collieries where the rate varied from 7*s.* 11*d.* to 8*s.* 3*d.* during the year. Surface workers— For the majority of the collieries the subsistence wage varied from 7*s.* 1*d.* to 7*s.* 1¾*d.* per shift, according to the percentage payable on basis rates each month. Slightly lower rates were paid at three collieries, varying from 6*s.* 11*d.* to 7*s.* 1¾*d.* per shift.
Salop	Varying from 5*s.* 2*d.* to 6*s.* per shift, according to colliery.
Forest of Dean ..	6*s.* 1½*d.* per shift.

the Year 1934 *to Colliery Workers.*

surface workers of 21 years of age and over, and from 1st January, 1934.

District.	Rate of Subsistence Wages.
Somersetshire :— Radstock District ..	An allowance of 9*d.* per shift for married workmen (and workmen 18 years of age and over, who are the sole support of their parents), subject to a maximum of 6*s.* 3*d.* per shift and 40*s.* per week.
Bristol :— Coalpit Heath ..	6*s.* 9*d.* per day for married workmen and for single workmen having a relative entirely dependent on them.
East Bristol ..	6*s.* 9*d.* per day, subject to a maximum addition of 6*d.* per day for underground workers and 1*s.* per day for surface workers.
Kent	*Married men* (*except Craftsmen*). 8*s.* 7½*d.* per shift for underground workers and 8*s.* 2*d.* per shift for surface workers. *Widowers and Single Men* (*on Surface*). 6*s.* 9*d.* per shift. *Boys* (*Underground and on Surface*). An allowance of 1*s.* 1½*d.* per shift. *Craftsmen.* An allowance of 1*s.* 3*d.* per shift. In addition, all workmen entitled to a subsistence allowance receive 3*d.* per shift for each child under 14 years of age.
South Wales and Monmouthshire	*From 1st January. Adult day-wage workmen :* A. Unmarried : (i) with no family responsibilities, 7*s.* per shift; (ii) with not less than 2 dependents, 7*s.* 6*d.* per shift. B. Married : (i) with no children, or with children living at home and working at or in a mine, 7*s.* 3*d.* per shift; (ii) with children living at home none of whom is working at or in a mine, 7*s.* 6*d.* per shift. *Youths 16 to 21 years of age :* (i) with one dependent, 7*s.* 3*d.* per shift; (ii) with not less than 2 dependents, 7*s.* 6*d.* per shift. *Youths 14 to 16 years of age,* who are the sole support of a family, 6*s.* per shift. *All other youths,* an allowance of 4*d.* per shift. *From 1st October. Adult day-wage workmen* and *youths over 16 years of age* who are the sole support of a family, 7*s.* 8*d.* per shift. *Youths 14 to 16 years of age* who are the sole support of a family, 6*s.* per shift. *All other youths,* an allowance of 4*d.* per shift.
North Wales	6*s.* per shift.
Scotland .. .. (Surface workers only.)	*Men 18 years of age and over.* An allowance of 11½*d.* per shift to make up to 6*s.* 8*d.* per shift, raised to 1*s.* and 7*s.*, respectively on 13th April. *Youths under 18 years of age.* An allowance of 5¾*d.* per shift to make up to 3*s.* 4*d.* per shift, raised to 6*d.* and 3*s.* 6*d.*, respectively, on 13th April. *Women* 18 *years of age and over.* An allowance of 7½*d.* per shift to make up to 4*s.* 9*d.* per shift, raised to 8*d.* and 5*s.*, respectively, on 13th April. *Girls under 18 years of age.* An allowance of 3¾*d.* per shift to make up to 2*s.* 4½*d.* per shift, raised to 4*d.* and 2*s.* 6*d.* respectively, on 13th April.

TABLE 21.—*Average Earnings per Shift of Coal Miners in the*

Period.	Northumberland.	Durham.	Yorkshire.	North Derbyshire and Nottinghamshire.	South Derbyshire, Leicestershire, Cannock Chase and Warwickshire.	Lancashire, Cheshire and North Staffordshire.
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
1914.						(a) Cash
June	6 2¼	6 2½	6 10	6 6¾	6 1¼	6 0¼
Annual Average. *1927* ..	*8 7¾*	*9 2¼*	*10 10*	*11 10½*	*10 6½*	*9 9*
1928 ..	*7 6⅓*	*8 1½*	*10 0½*	*10 4⅓*	*9 9*	*9 3¼*
1929 ..	*7 4¾*	*7 11½*	*10 0¾*	*10 3¾*	*9 8¼*	*9 3*
1930 ..	*7 8*	*8 0¾*	*10 1¾*	*10 4¼*	*9 9½*	*9 2¼*
1931 ..	*7 8¾*	*8 0¾*	*10 1¾*	*10 4¼*	*9 8¼*	*9 2¼*
1932 ..	*7 7¾*	*8 1*	*10 2*	*10 4¼*	*9 8¼*	*9 3¾*
1933 ..	*7 8⅓*	*8 0½*	*10 1¾*	*10 5*	*9 7½*	*9 3¼*
1934 ..	*7 9½*	*8 0½*	*10 2*	*10 5¼*	*9 8*	*9 2½*
1929.						
Jan. to March	7 4¼	7 11½	10 0⅓	10 3¼	9 7	9 3
April ,, June	7 3¾	7 10¾	10 0¼	10 3	9 9¼	9 2¾
July ,, Sept.	7 5¼	7 11¼	10 1¼	10 4½	9 8	9 3
Oct. ,, Dec...	7 5¾	8 0¼	10 1½	10 4¼	9 9½	9 3
1930.						
Jan. to March	7 7½	8 0½	10 1¾	10 3¾	9 9¾	9 2¼
April ,, June	7 7¾	8 1	10 1½	10 4¼	9 9½	9 1¾
July ,, Sept.	7 8¼	8 1	10 1¾	10 4¾	9 9¾	9 2¼
Oct. ,, Dec...	7 8½	8 0¾	10 1¾	10 4½	9 9	9 2½
1931.						
Jan. to March	7 8	8 0¼	10 1⅓	10 3¾	9 8½	9 2
April ,, June	7 8¾	8 0¾	10 1½	10 5	9 7	9 1
July ,, Sept.	7 8¾	8 1	10 1¾	10 4½	9 8¼	9 2⅓
Oct. ,, Dec...	7 9¼	8 1¼	10 2¼	10 4¼	9 8½	9 3½
1932.						
Jan. to March	7 8	8 0¾	10 2	10 4¼	9 8½	9 3½
April ,, June	7 7¾	8 0¾	10 2	10 3¾	9 7¾	9 3¼
July ,, Sept.	7 7¼	8 1¼	10 1½	10 4½	9 8¾	9 4
Oct. ,, Dec...	7 8	8 1¼	10 2½	10 4¾	9 8	9 4
1933.						
Jan. to March	7 8¼	8 0½	10 1¼	10 4¾	9 8	9 3½
April ,, June	7 8½	8 0¾	10 2	10 5¼	9 7¼	9 4¼
July ,, Sept.	7 8½	8 0½	10 1¾	10 5¼	9 7¼	9 2½
Oct. ,, Dec...	7 8¾	8 0¼	10 2¼	10 4½	9 7¼	9 2½
1934.						
Jan. to March	7 9¾	8 0½	10 2	10 4¾	9 7½	9 2⅓
April ,, June	7 9½	8 0	10 1½	10 5	9 7¼	9 2¾
July ,, Sept.	7 9	8 0¼	10 2¼	10 6¼	9 8¾	9 1⅔
Oct. ,, Dec...	7 9¾	8 1½	10 2½	10 5¾	9 9	9 2¾
						(b) Value of
Year 1927 ..	1 1½	1 2½	0 4¼	0 4¾	0 4½	0 0¾
,, 1928 ..	1 0½	1 1	0 4	0 4	0 4	0 0¾
,, 1929 ..	1 0	1 0½	0 3¾	0 3¾	0 4	0 0½
,, 1930 ..	1 1¼	1 1¼	0 3¾	0 3¾	0 4	0 0⅓
,, 1931 ..	1 0¼	1 1	0 4	0 3¾	0 4¼	0 0½
,, 1932 ..	1 0¼	1 2	0 4¼	0 4	0 4¼	0 0½
,, 1933 ..	0 11¾	1 1¾	0 4	0 4	0 4¼	0 0½
,, 1934 ..	0 11	1 1	0 3½	0 4	0 4¼	0 0¼

(*) The figures shown for South Wales and Monmouthshire relate to the years

(†) The maximum hours of labour below-ground were reduced from 8 to 7 per was restored in all districts except Yorkshire, Nottinghamshire, North Derbyshire Northumberland and Durham the hours of hewers were increased by 1 hour to and in 1931, for particulars of which *see* Table 19 of the Tenth and Eleventh Annual

Principal Districts of Great Britain in 1914 *and from* 1927.

South Wales and Monmouthshire. (*)	Cumberland, North Wales, South Staffordshire, Shropshire, Bristol, Forest of Dean, Somersetshire and Kent.	Scotland.	Great Britain.	
			Average Earnings.	Quantity of Coal raised per man-shift worked. (†)
s. d.	*s. d.*	*s. d.*	*s. d.*	cwts.
Earnings.				
6 9	5 6¾	6 9	6 5¾	20·32
10 0¾	*9 0½*	*9 7½*	*10 0¾*	*20·61*
9 6½	*8 8¾*	*9 2¾*	*9 3½*	*21·29*
9 5¾	*8 7¾*	*9 2*	*9 2¾*	*21·69*
9 6	*8 9¼*	*9 2½*	*9 3½*	*21·62*
8 11½	*8 8¾*	*9 0¾*	*9 2¼*	*21·61*
8 11¼	*8 9¼*	*8 9½*	*9 2*	*21·99*
8 11	*8 8*	*8 9*	*9 1½*	*22·47*
9 0½	*8 8*	*8 9¼*	*9 1¾*	*22·94*
9 4¼	8 7¼	9 2½	9 2¾	22·13
9 7¾	8 7¾	9 1½	9 2½	21·45
9 6¼	8 8	9 1½	9 2½	21·40
9 5	8 7¾	9 2	9 2¾	21·78
9 5¾	8 8¼	9 2½	9 3¼	21·94
9 6	8 9¼	9 2¼	9 3¼	21·32
9 6¼	8 9½	9 2	9 3¾	21·34
9 6	8 9¾	9 2¾	9 3¾	21·84
9 0½	8 9	9 2¾	9 2½	21·78
8 11¼	8 9	9 2¾	9 2¼	21·44
8 11½	8 8½	8 11½	9 2½	21·35
8 10¾	8 8¾	8 10	9 2¼	21·86
8 11	8 9¼	8 10	9 2¼	21·98
8 11¼	8 9½	8 9¼	9 2	21·78
8 11¼	8 9½	8 9¼	9 1¾	21·50
8 11½	8 9	8 9½	9 2¼	22·62
8 11	8 8	8 9	9 1¾	22·67
8 11	8 8½	8 9	9 1¾	22·07
8 10¾	8 8	8 8¾	9 1¼	22·05
8 11	8 7¾	8 9	9 1½	23·00
8 11¼	8 7¾	8 8¾	9 1¾	23·32
8 11½	8 7½	8 9	9 1	22·59
9 1	8 7¾	8 9	9 1¾	22·55
9 2¾	8 9	8 9¾	9 2¾	23·23
Allowances in Kind.				
0 3¼	0 2¾	0 0¾	0 5	—
0 2¾	0 2¾	0 0½	0 4¾	—
0 2½	0 2½	0 0½	0 4½	—
0 2¾	0 2¾	0 0½	0 4¾	—
0 2¾	0 3	0 0½	0 4½	—
0 2¾	0 3	0 0½	0 4¾	—
0 2¾	0 2¾	0 0½	0 4½	—
0 2¾	0 2½	0 0½	0 4½	—

ended January, 1928 to 1935.

shift on 16th July, 1919. After the stoppage of work in 1926 the eight-hour day and Kent, where the hours of labour were increased from 7 to 7½ daily. In 7½ per day. Further changes in hours of labour took place in December, 1930. Reports. The maximum hours have since been 7½ per day.

TABLE 22.—*Average Quarterly Earnings of Coal Miners in each District from 1928.*

Period.	Northumberland.	Durham.	Yorkshire.	North Derbyshire and Nottinghamshire.	South Derbyshire, Leicestershire, Cannock Chase and Warwickshire.	Lancashire, Cheshire and North Staffordshire.	South Wales and Monmouthshire.*	Cumberland, North Wales, South Staffordshire, Shropshire, Bristol, Forest of Dean, Somersetshire, and Kent.	Scotland.	Great Britain.	
										Average Earnings.	Tonnage of coal raised per person employed.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	Tons.
(a) Cash Earnings (Average per Quarter).											
1928	*24 5 11*	*26 0 0*	*28 3 8*	*28 5 1*	*27 10 8*	*25 18 5*	*31 9 10*	*27 12 10*	*33 7 5*	*28 9 2*	*65·16*
1929	*25 0 5*	*26 12 0*	*29 17 0*	*29 19 7*	*28 15 4*	*27 2 3*	*32 4 10*	*28 17 7*	*34 0 2*	*29 11 7*	*69·58*
1930	*23 19 3*	*25 14 3*	*28 15 1*	*29 8 4*	*28 10 6*	*27 2 1*	*29 6 1*	*29 2 0*	*32 14 7*	*28 9 7*	*66·26*
1931	*25 5 1*	*24 18 8*	*27 6 1*	*28 10 10*	*28 5 10*	*27 7 1*	*28 16 3*	*28 4 11*	*32 0 9*	*27 17 8*	*65·56*
1932	*24 17 5*	*24 13 3*	*26 15 0*	*27 5 5*	*27 2 7*	*26 18 9*	*28 4 5*	*28 5 7*	*32 0 10*	*27 7 1*	*65·58*
1933	*26 2 2*	*24 17 10*	*27 3 6*	*27 6 2*	*26 2 5*	*27 2 7*	*28 8 9*	*28 15 3*	*32 3 4*	*27 11 6*	*67·87*
1934	*27 8 8*	*26 4 10*	*28 12 5*	*28 4 1*	*27 12 2*	*28 13 0*	*29 16 9*	*30 2 7*	*33 5 8*	*28 17 11*	*72·42*
1930.											
Jan. to Mar. ..	25 3 8	26 13 0	30 15 4	31 7 7	31 0 1	29 5 7	30 13 4	29 19 9	33 13 9	30 0 7	71·06
Apr. „ June ..	22 5 0	24 11 11	26 19 11	26 12 6	25 16 3	25 17 10	30 8 11	27 17 2	32 12 0	27 8 0	63·02
July „ Sept. ..	22 10 6	24 17 4	27 7 2	28 14 9	27 5 1	24 14 0	31 1 8	28 9 5	31 9 10	27 15 3	63·56
Oct. „ Dec. ..	25 18 6	26 15 4	29 16 11	30 18 2	30 0 1	28 9 1	24 19 8	30 1 7	33 0 6	28 13 1	67·18
1931.											
Jan. to Mar. ..	25 6 0	25 10 3	27 14 10	29 12 1	29 9 3	28 13 1	29 7 8	29 12 0	32 7 3	28 11 9	67·63
Apr. „ June ..	24 1 7	23 13 11	26 0 7	26 16 8	26 15 9	26 11 1	28 12 5	28 3 8	32 2 1	26 19 10	63·02
July „ Sept. ..	24 1 10	23 18 6	26 11 10	28 1 7	27 8 9	25 11 1	28 14 1	26 3 11	29 19 3	26 18 4	62·44
Oct. „ Dec. ..	27 11 11	26 11 10	28 17 1	29 12 0	29 8 11	28 11 11	28 10 3	28 18 7	33 11 4	29 0 3	69·04
1932.											
Jan. to Mar. ..	25 12 4	24 19 4	27 13 6	28 11 7	28 16 0	28 4 4	28 5 10	28 16 6	32 10 4	28 2 1	67·32
Apr. „ June ..	23 11 11	24 4 0	26 13 4	26 12 0	26 10 6	27 0 0	27 18 0	28 4 1	31 2 6	26 18 11	64·08
July „ Sept. ..	22 16 5	23 9 1	24 0 10	24 17 7	25 3 7	24 0 11	27 4 9	27 0 4	30 6 5	25 8 4	59·69
Oct. „ Dec. ..	27 9 1	26 0 2	28 11 3	28 18 7	27 19 7	28 8 7	29 9 9	29 0 11	34 2 6	28 18 4	71·18
1933.											
Jan. to Mar. ..	26 16 4	25 11 3	29 2 3	29 7 0	29 7 8	29 10 2	28 3 9	29 15 5	32 12 0	28 17 2	71·46
Apr. „ June ..	24 4 9	23 13 5	25 2 0	24 6 0	23 10 6	26 2 0	27 17 7	27 5 11	31 2 5	26 0 0	62·78
July „ Sept. ..	25 18 10	24 5 0	24 12 6	25 14 5	23 14 2	24 8 0	28 7 1	28 2 7	30 9 9	26 2 4	63·31
Oct. „ Dec. ..	27 7 11	26 0 7	29 15 4	29 14 5	27 16 11	28 9 4	29 6 6	29 16 2	34 7 0	29 5 3	73·76
1934.											
Jan. to Mar. ..	27 7 2	26 4 11	30 16 0	31 0 7	31 3 3	30 7 1	28 12 1	30 19 7	33 4 11	29 17 9	76·18
Apr. „ June ..	26 15 6	25 14 1	26 11 5	25 11 7	25 6 9	27 18 1	28 10 4	29 5 4	32 17 10	27 11 0	68·45
July „ Sept. ..	27 4 0	25 9 8	26 12 7	25 2 5	25 17 5	30 16 0	29 3 6	31 15 8	27 15 2	68·51	
Oct. „ Dec. ..	28 7 8	27 10 3	30 3 3	29 10 7	28 15 6	30 7 1	31 9 5	31 2 10	35 3 6	30 7 2	76·43
(b) Value of Allowances in Kind (Average per Quarter).											
1928	3 7 6	3 9 8	0 18 7	0 17 11	0 18 9	0 3 1	0 15 8	0 13 11	0 3 2	1 3 11	—
1929	3 7 0	3 10 4	0 18 6	0 18 2	1 0 3	0 3 0	0 13 10	0 14 5	0 3 3	1 4 4	—
1930	3 9 0	3 10 7	0 18 2	0 17 11	0 19 11	0 2 11	0 13 11	0 14 9	0 3 1	1 4 4	—
1931	3 6 8	3 7 7	0 18 0	0 17 6	1 0 1	0 2 8	0 14 9	0 15 9	0 3 3	1 3 4	—
1932	3 6 5	3 11 2	0 18 2	0 17 7	0 19 10	0 2 4	0 14 8	0 16 8	0 2 10	1 3 8	—
1933	3 5 10	3 10 8	0 17 5	0 17 9	0 19 7	0 2 0	0 14 4	0 15 1	0 2 7	1 3 3	—
1934	3 4 9	3 11 3	0 17 0	0 18 3	1 0 0	0 1 10	0 14 6	0 14 2	0 2 5	1 3 8	—

* The figures shown for South Wales and Monmouthshire relate to the years ended January, 1929 to 1935. Those for the three months ended January, 1931 were affected by a dispute.

TABLE 23.—*Average Costs of Production, Proceeds and Profits of the Coal Mining Industry, and Tonnage of Coal disposable commercially from* 1922.

	Period.	Proceeds.	Costs of Production. Wages.	Stores and Timber.	Other Costs.	Royalties.	Total Costs of Production.	Balance. Credit.	Debit.	Approximate Tonnage of Coal disposable commercially.
		(s. d.)	(s. d.)	(s. d.)	(s. d.)	(s. d.)	(s. d.)	(s. d.)	(s. d.)	
		Per ton of coal disposable commercially.								
Annual Average	*1922*	*19 1½*	*12 1¾*	*2 3⅜*	*3 2½*	*0 7*	*18 1¾*	*0 11¾*	—	*227,500,000*
	1923	*19 9½*	*12 4¼*	*2 2*	*2 8½*	*0 6¼*	*17 7½*	*2 2*	—	*252,600,000*
	1924	*19 9½*	*13 3*	*2 1½*	*2 10*	*0 6¼*	*18 7¼*	*1 2*	—	*243,900,000*
	1925	*17 1*	*(a)12 9½* / *(b)11 8*	*2 10¾*	*2 10¼*	*0 6¼*	*(a)17 11¼* / *(b)16 9⅜*	*0 3¼*	—	*221,700,000*
	1926(c) ..	*15 8¾*	*(a)12 4* / *(b) 9 7*	*1 9¾*	*2 8¼*	*0 6¼*	*(a)17 2¾* / *(b)14 5¾*	*1 3*	—	*80,800,000*
	1927	*15 1¼*	*10 7½*	*1 9⅜*	*2 8¾*	*0 6¼*	*15 7*	—	*0 5¾*	*230,900,000*
	1928	*13 3¼*	*9 5¾*	*1 7¼*	*2 8¼*	*0 6*	*14 2¼*	—	*0 11*	*219,300,000*
	1929	*13 11*	*9 2*	*1 6⅝*	*2 4⅜*	*0 6*	*13 6¾*	*0 4½*	—	*239,300,000*
	1930	*14 1*	*9 3⅜*	*1 7¼*	*2 5*	*0 5¾*	*13 8⅜*	*0 4¼*	—	*222,500,000*
	1931	*14 0¼*	*9 2¾*	*1 6½*	*2 6⅛*	*0 6*	*13 8¾*	*0 3⅜*	—	*203,400,000*
	1932	*13 10*	*9 0⅜*	*1 5⅜*	*2 8⅛*	*0 6*	*13 8*	*0 2*	—	*192,200,000*
	1933	*13 6½*	*8 9½*	*1 5*	*2 8½*	*0 6*	*13 3⅜*	*0 2¾*	—	*191,500,000*
	1934	*13 4½*	*8 7¼*	*1 5½*	*2 6*	*0 5¾*	*12 11½*	*0 5*	—	*204,900,000*
	1929.									
	Jan. to March ..	14 0¼	9 0¼	1 6	2 4½	0 5¾	13 3	0 9¼	—	61,200,000
	April ,, June ..	13 7	9 3¼	1 6¾	2 7½	0 6	13 10½	—	0 3½	57,400,000
	July ,, Sept. ..	13 8¾	9 3¼	1 6¾	2 6	0 6	13 9	—	0 0¼	58,400,000
	Oct. ,, Dec. ..	14 3	9 2	1 7¼	2 1¾	0 6	13 3¾	0 11¼	—	62,300,000
	1930.									
	Jan. to March ..	14 5½	9 1½	1 7	2 3	0 5¾	13 4	1 1½	—	61,900,000
	April ,, June ..	13 10¾	9 5	1 8¼	2 6½	0 6	14 0¾	—	0 2	53,900,000
	July ,, Sept. ..	13 9½	9 5½	1 7¼	2 5¾	0 6	13 11¾	—	0 2½	52,000,000
	Oct. ,, Dec. ..	14 1¾	9 3¼	1 6¾	2 5	0 5¾	13 7½	0 6¼	—	54,700,000
	1931.									
	Jan. to March ..	14 3½	9 2½	1 6½	2 4¾	0 6	13 6¼	0 9	—	54,200,000
	April,, June ..	13 9¾	9 3½	1 6¾	2 7½	0 6½	13 11	—	0 1¼	49,300,000
	July ,, Sept. ..	13 10	9 4¼	1 6¼	2 8¼	0 6¼	14 0	—	0 2	47,100,000
	Oct. ,, Dec. ..	14 1	9 1½	1 5¾	2 6	0 6	13 6	0 7	—	52,800,000
	1932.									
	Jan. to March ..	14 0¾	9 0¾	1 5¾	2 6¾	0 6	13 6½	0 6½	—	51,500,000
	April ,, June ..	13 8	9 1½	1 6	2 9½	0 6	13 10	—	0 2	47,700,000
	July ,, Sept. ..	13 7¼	9 3½	1 6	3 0½	0 6¼	14 2¾	—	0 7½	42,400,000
	Oct. ,, Dec. ..	13 11	8 9¾	1 5	2 6¾	0 6	13 2¼	0 8¾	—	50,600,000
	1933.									
	Jan. to March ..	13 11	8 9	1 4¾	2 6¾	0 6	13 1¼	0 9¾	—	51,400,000
	April ,, June ..	13 4¾	8 11¾	1 5¼	2 11	0 6¼	13 9¼	—	0 4½	44,400,000
	July ,, Sept. ..	13 3¼	8 11	1 5¼	2 10½	0 6¼	13 8¼	—	0 5	43,800,000
	Oct. ,, Dec. ..	13 6¾	8 6¾	1 4½	2 5½	0 6	12 9¾	0 9	—	51,900,000
	1934.									
	Jan. to March ..	13 7½	8 5½	1 4¾	2 4¼	0 5¾	12 7¼	1 0¼	—	54,800,000
	April ,, June ..	13 2¼	8 8¼	1 5¼	2 7	0 6	13 1¾	0 0½	—	48,500,000
	July ,, Sept. ..	13 1¾	8 8½	1 5½	2 7¾	0 6	13 3¼	—	0 1½	47,900,000
	Oct. ,, Dec. ..	13 6¼	8 6¾	1 6	2 5½	0 5¾	12 11	0 7¼	—	53,700,000

(*a*) Including Subvention. (*b*) Excluding Subvention.

(*c*) January–April. On 1st May, 1926, the production of coal at almost all the mines was suspended and the usual particulars of the proceeds, costs of production, &c., for the last eight months of 1926 are not available.

Note.—Generally speaking, Revenue and Expenditure follow the accounting principles which are adopted by the Industry in making wages ascertainments.

Proceeds represent the amount received for coal and other minerals* disposed of commercially per ton of coal sold after deducting selling and delivery expenses.

Wages include Subsistence and other allowances to low-paid day-wage workers.

Other Costs of Production include management, salaries, insurances, repairs, office and general expenses, contribution to the Miners' Welfare Fund, remuneration of working proprietors, depreciation, &c. They do not include certain items such as interest on debentures or other loans, bank charges, amortisation and taxation which the Mining Association of Great Britain estimate to amount to 3*d.* per ton or more.

Royalties include the rental value of freehold minerals where they are worked by the proprietor.

* Mines where coal is an ancillary mineral are excluded.

TABLE 24.—*Average Total Cost of Production per ton of coal*
Average Proceeds of the Coal

Period.	Northumberland.						Durham.					
	Wages Cost.		*Total Cost.**		Proceeds.		Wages Cost.		*Total Cost.**		Proceeds.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
Annual Average. 1928	7	4	*12*	*0½*	11	0½	7	11¼	*12*	*11½*	12	2
Annual Average. 1929	7	0¼	*11*	*2¼*	11	8	7	9½	*12*	*6½*	12	9¾
Annual Average. 1930	7	3	*11*	*7½*	12	3¾	7	11¾	*12*	*9½*	13	2
Annual Average. 1931	7	2¾	*11*	*6½*	11	7½	7	10½	*12*	*9*	12	8¼
Annual Average. 1932	7	1½	*11*	*7¾*	11	2¾	7	9¾	*12*	*10½*	12	6
Annual Average. 1933	7	0¼	*11*	*4¾*	11	2	7	9	*12*	*8¼*	12	3¾
Annual Average. 1934	6	11	*11*	*2½*	11	1½	7	8¾	*12*	*6¼*	12	3¼
1931.												
January–March	7	3¼	*11*	*5¼*	12	1¼	7	10¼	*12*	*6½*	12	11¼
April–June	7	3½	*11*	*9*	11	6	7	11¼	*12*	*11¾*	12	7¾
July–September	7	3¼	*11*	*10½*	11	4¼	7	11½	*12*	*11½*	12	6½
October–December	7	0¾	*11*	*2*	11	5¾	7	9¾	*12*	*7*	12	7
1932.												
January–March	7	1	*11*	*4¼*	11	4¾	7	10¾	*12*	*11*	12	7¾
April–June	7	2	*11*	*9½*	11	1¾	7	10	*12*	*11¼*	12	6¼
July–September	7	3½	*12*	*1¼*	10	11½	7	10¾	*13*	*2¼*	12	4¼
October–December	7	0¼	*11*	*5¼*	11	4½	7	8¼	*12*	*6¼*	12	5½
1933.												
January–March	7	1¼	*11*	*4¾*	11	5½	7	9	*12*	*7½*	12	6½
April–June	7	1½	*11*	*9¼*	10	11½	7	10	*12*	*10¾*	12	3¾
July–September	7	0	*11*	*3½*	10	10½	7	10	*12*	*11*	12	2
October–December	6	10¾	*11*	*2*	11	3¾	7	7½	*12*	*4¼*	12	2¼
1934.												
January–March	6	11	*11*	*1*	11	5¼	7	7¾	*12*	*4*	12	4
April–June	6	10¼	*11*	*2*	10	10¾	7	8¼	*12*	*4½*	12	2
July–September	6	11	*11*	*2*	10	8¾	7	9	*12*	*7½*	12	1¾
October–December	6	11½	*11*	*4½*	11	4¾	7	9¾	*12*	*8¼*	12	4¾

Period.	Lancashire, Cheshire and North Staffordshire.						South Wales and Monmouthshire.†					
	Wages Cost.		*Total Cost.**		Proceeds.		Wages Cost.		*Total Cost.**		Proceeds.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
Annual Average. 1928	12	0¾	*17*	*7¼*	16	2¼	10	2¼	*15*	*5*	14	0¾
Annual Average. 1929	11	7	*16*	*9½*	16	8¼	9	11¾	*14*	*9¾*	14	11¼
Annual Average. 1930	11	7¼	*16*	*9*	16	8¾	10	3	*15*	*4*	15	6
Annual Average. 1931	11	7¾	*16*	*10*	17	0	9	11½	*15*	*2½*	15	2¾
Annual Average. 1932	11	2½	*16*	*5¾*	16	7½	10	0	*15*	*6¼*	15	6¾
Annual Average. 1933	10	9¼	*15*	*10¼*	15	11¾	9	10¼	*15*	*5*	15	3½
Annual Average. 1934	10	4	*15*	*3*	15	8¼	9	9¾	*15*	*1½*	15	0¼
1931.												
January–March	11	4¾	*16*	*1¾*	17	2¾	9	11¼	*15*	*0½*	15	3
April–June	11	9¼	*17*	*2¼*	16	8	9	11½	*15*	*3½*	15	2½
July–September	12	1¼	*17*	*11*	16	10¼	10	0	*15*	*4¼*	15	2½
October–December	11	4½	*16*	*4¼*	17	2¾	9	11½	*15*	*2¾*	15	3½
1932.												
January–March	11	2½	*16*	*1¾*	17	1	9	10½	*15*	*0¾*	15	3½
April–June	11	2¾	*16*	*4½*	16	4½	10	0	*15*	*8½*	15	6
July–September	11	7½	*17*	*8¼*	16	4	10	2½	*16*	*1*	15	8¾
October–December	10	10¼	*15*	*11½*	16	7¾	9	10¾	*15*	*3¼*	15	9
1933.												
January–March	10	6¾	*15*	*5½*	16	6¼	9	9¼	*15*	*4½*	15	4½
April–June	10	11¾	*16*	*2¾*	15	8¾	10	1	*15*	*10¾*	15	6¼
July–September	11	1¾	*16*	*10½*	15	4¼	9	10¾	*15*	*5¾*	15	3¼
October–December	10	6¼	*15*	*1*	16	1½	9	7¾	*14*	*11½*	15	0
1934.												
January–March	10	1½	*14*	*7¾*	16	0	9	7½	*14*	*11¼*	15	0¼
April–June	10	6½	*15*	*6¼*	15	7	9	10¼	*15*	*0¾*	14	11¾
July–September	10	7¼	*16*	*1½*	15	2½	9	9¾	*15*	*1¼*	14	11¾
October–December	10	1¾	*14*	*11½*	15	10½	9	11½	*15*	*4½*	15	0½

* Including Wages.
† The figures shown for South Wales and Monmouthshire

Note.—For particulars of the composition of the costs of

disposable commercially, distinguishing the Cost of Wages, and Mining Industry from 1928.

Yorkshire.			North Derbyshire and Nottinghamshire.			South Derbyshire, Leicestershire, Cannock Chase and Warwickshire.		
Wages Cost.	*Total Cost.**	Proceeds.	Wages Cost.	*Total Cost.**	Proceeds.	Wages Cost.	*Total Cost.**	Proceeds.
s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
9 7¼	*13 10½*	12 11¾	9 6½	*13 6½*	13 0½	10 4½	*14 11¾*	14 9
9 2½	*13 0½*	13 7¾	9 2¼	*12 10¾*	13 7	9 10¾	*14 2*	15 4¾
9 2½	*13 0¼*	13 7½	9 2¼	*12 10½*	13 5¾	9 11¾	*14 1¾*	15 1½
9 2½	*13 2½*	13 8	9 0¼	*12 9*	13 10	10 3¾	*14 6½*	15 11
9 0½	*13 2¼*	13 8	8 10½	*12 10*	13 10	10 3¾	*14 8¾*	15 9½
8 7¾	*12 8¼*	13 5½	8 6	*12 4¾*	13 4	9 11½	*14 3½*	15 2¼
8 4¾	*12 3¾*	13 2½	8 3	*12 0¼*	13 0½	9 5¾	*13 6¾*	14 10½
9 2	*13 0*	13 9¾	8 11½	*12 6¼*	13 11¼	9 11¼	*14 0*	15 11¾
9 3¼	*13 4¾*	13 6	9 0¼	*12 11¼*	13 4¾	10 4½	*14 8*	15 4¾
9 4	*13 5½*	13 5	9 0¼	*12 9*	13 7½	10 7½	*14 11½*	15 8½
9 1¼	*13 0*	13 10½	9 0¾	*12 10*	14 4	10 4	*14 7*	16 5¾
9 1	*13 1¾*	13 11¼	8 11	*12 8¾*	14 3¾	10 3	*14 6¾*	16 4
9 1	*13 3½*	13 5¾	8 10½	*13 0*	13 4	10 6¼	*15 1¼*	15 5¾
9 4¼	*13 11¼*	13 4½	9 1½	*13 5*	13 5¾	10 7½	*15 2¾*	15 5¾
8 8¼	*12 6¼*	13 9¼	8 7¼	*12 3½*	14 1	9 11	*14 1¾*	15 9¼
8 7½	*12 4½*	13 9¼	8 6¼	*12 1¾*	14 0½	9 8¼	*13 8*	15 7¾
8 10¼	*13 2¾*	13 3½	8 8	*12 11*	12 9¾	10 5½	*15 3*	14 8
8 10¼	*13 3½*	13 2	8 7¼	*12 9*	12 11½	10 3¾	*15 0½*	14 10
8 4¼	*12 0½*	13 6	8 3	*11 11*	13 4	9 7	*13 7*	15 4¼
8 2¾	*11 10¼*	13 6	8 1	*11 6¼*	13 5	9 1	*12 9¼*	15 4¾
8 6¾	*12 8*	13 0¾	8 5	*12 6½*	12 7¾	9 8¾	*14 1*	14 7¼
8 6¾	*12 8¾*	12 11½	8 5	*12 4*	12 9¼	9 10½	*14 4*	14 4¾
8 4	*12 1¾*	13 2¾	8 1	*11 9½*	13 2	9 4¼	*13 4½*	14 11¼

Cumberland, North Wales, South Staffordshire, Shropshire, Bristol, Forest of Dean, Somerset and Kent.			Scotland.			Great Britain.		
Wages Cost.	*Total Cost.**	Proceeds.	Wages Cost.	*Total Cost.**	Proceeds.	Wages Cost.	*Total Cost.**	Proceeds.
s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
10 6¾	*15 4¼*	14 3¼	8 7	*12 10¼*	12 1¼	9 5¾	*14 2¼*	13 3¼
10 3¼	*14 10*	14 8	8 5¼	*12 6½*	12 9¾	9 2	*13 6½*	13 11
10 5	*15 0¾*	14 11¾	8 7½	*12 10½*	12 9½	9 3¾	*13 8¾*	14 1
10 6¼	*15 4*	15 2½	8 4	*12 5½*	12 3½	9 2¾	*13 8¾*	14 0¼
10 3	*15 0¼*	14 10¼	7 10¾	*11 10*	11 5½	9 0¾	*13 8*	13 10
9 9¾	*14 5½*	14 6	7 8¼	*11 6*	11 5¾	8 9½	*13 3¾*	13 6½
9 9¾	*14 4½*	14 4½	7 6½	*11 3*	11 8¾	8 7¼	*12 11½*	13 4½
10 5¼	*15 1*	15 5½	8 5½	*12 7¼*	13 1	9 2¼	*13 6¼*	14 3¼
10 8½	*15 7¾*	15 1	8 5¼	*12 7½*	12 0¼	9 3½	*13 11*	13 9¾
10 6¾	*15 6½*	15 0	8 5¼	*12 8¾*	11 11¼	9 4¼	*14 0*	13 10
10 4¾	*15 1¼*	15 3¼	8 0¾	*12 0*	12 1	9 1½	*13 6*	14 1
10 3¼	*14 11*	15 2½	8 0	*11 10¾*	11 9½	9 0¾	*13 6¼*	14 0¾
10 5½	*15 3½*	14 9¼	7 11¾	*12 0¾*	11 3¼	9 1½	*13 10*	13 8
10 4¼	*15 4¼*	14 6½	7 11½	*12 0½*	10 11½	9 3¼	*14 2¾*	13 7¼
9 10¾	*14 6¾*	14 10½	7 8	*11 5*	11 8¾	8 9¾	*13 2¼*	13 11
9 8	*14 2¼*	14 10¾	7 8¼	*11 5¼*	11 9¾	8 9	*13 1¼*	13 11
9 11¼	*14 9½*	14 3½	7 9¼	*11 8½*	11 0¾	8 11¾	*13 9¼*	13 4¾
9 10¼	*14 6¾*	14 1½	7 10	*11 10*	11 2¼	8 11	*13 8¼*	13 3¼
9 9½	*14 3½*	14 7¼	7 5¾	*11 1½*	11 9¼	8 6¾	*12 9¾*	13 6¾
9 6½	*13 10¼*	14 7¼	7 5¾	*11 1¼*	11 10	8 5½	*12 7¼*	13 7½
9 11½	*14 7¼*	14 2	7 7½	*11 4½*	11 5¾	8 8¼	*13 1¾*	13 2¼
9 11¾	*14 7¾*	14 1	7 8	*11 5¾*	11 6½	8 8¾	*13 3¼*	13 1¾
9 9¼	*14 5*	14 7¼	7 5¼	*11 0¾*	12 0½	8 6¾	*12 11*	13 6¼

relate to the years ended January, 1929 to 1935.
production and proceeds *see* general Note to Table 23.

TABLE 25.—*Output, Costs of Production, Proceeds and Profits*

[The figures included in respect of South Wales and

Note.—The particulars are based partly upon the returns made for the purpose of wages Colliery Owners. The definition of the items of cost and proceeds is similar to that of in the item " Wages," and " the proceeds of miners' coal," so far as it is supplied at special The proceeds and the costs of raising ancillary minerals at coal mines are included.

	Quarter ended 31st March.		Quarter ended 30th June.	
Percentage proportion of the Industry to which the particulars relate ..	% 97		% 97	
Output of Coal :—	Tons.		Tons.	
1. Tonnage of saleable coal raised	57,249,492		50,628,787	
2. Mine consumption	2,953,414		2,761,935	
3. Miners' coal	1,175,276		955,320	
4. Tonnage disposable commercially	53,120,802		46,911,532	
	Amount.	*Per ton disposable commercially.*	Amount.	*Per ton disposable commercially.*
Costs of Production :—	£	*s. d.*	£	*s. d.*
5. Wages	22,457,925	*8 5·46*	20,377,830	*8 8·25*
6. Stores and Timber	3,693,273	*1 4·69*	3,392,155	*1 5·35*
7 Other Costs (management, salaries, insurances, repairs, office and general expenses, depreciation, &c.)	6,142,449	*2 3·75*	6,269,911	*2 8·08*
8. Miners' Welfare Fund Contributions†	122,230	*0 0·55*	*Cr. 210,658*	*Cr.0 1·08*
9. Royalties (including the rental value of freehold minerals where worked by the proprietor) ..	1,285,656	*0 5·81*	1,150,393	*0 5·89*
10. Total Costs	33,701,533	*12 8·26*	30,979,631	*13 2·49*
11. Deduct proceeds of miners' coal	224,648	*0 1·01*	166,468	*0 0·85*
12. Net Costs..	33,476,885	*12 7·25*	30,813,163	*13 1·64*
Proceeds :—				
13. Commercial disposals	36,202,666	*13 7·57*	30,929,203	*13 2·23*
Balance :—				
14. Debits	—	—	—	—
15. Credits	2,725,781	*1 0·32*†	116,040	*0 0·59*†
Numbers Employed, Shifts Worked, &c. :—				
16. Number of workpeople employed	751,463		739,646	
17. Number of man-shifts worked (including week-end and overtime shifts) :—				
(*a*) At the coal-face	19,504,147		17,497,629	
(*b*) Elsewhere below ground	18,664,026		17,121,097	
(*c*) On the surface	10,924,673		10,204,614	
(*d*) Total above and below ground	49,092,846		44,823,340	
18. Number of man-shifts lost which could have been worked (including absences due to sickness or accident)	3,041,128		2,600,089	
19. Output per man-shift worked ..	cwts. 23·32		cwts. 22·59	
20. Earnings per man-shift worked (exclusive of allowances in kind)	*s. d.* 9 1·79		*s. d.* 9 1·11	
21. Value of allowances in kind per man-shift worked	0 4·55		0 4·54	

* Particulars for each of the principal Coal Districts will be found in the White Papers

† Including certain adjustments arising from the Mining Industry (Welfare Fund) Act, has been reduced from a penny to a halfpenny per ton upon the output for the year 1932, indicated in items 14 and 15.

of the Coal Mining Industry during the Year 1934.*

Monmouthshire relate to the Year ended January, 1935.]

ascertainments for certain Districts, and partly upon other returns supplied by individual previous Summaries, *i.e.*, subsistence allowances to low-paid day-wage workers are included prices, are treated as a reduction of the cost of producing the coal disposed of commercially.

Quarter ended 30th September.		Quarter ended 31st December.		**Year 1934.**	
% 97		% 97		% 97	
Tons. 49,830,526 2,686,466 874,811 46,269,249		Tons. 56,051,751 2,912,030 1,116,389 52,023,332		**Tons. 213,760,556 11,313,845 4,121,796 198,324,915**	
Amount.	*Per ton disposable commercially.*	Amount.	*Per ton disposable commercially.*	**Amount.**	*Per ton disposable commercially.*
£	*s. d.*	£	*s. d.*	£	*s. d.*
20,190,484	*8 8·73*	22,262,939	*8 6·71*	**85,289,178**	*8 7·21*
3,362,458	*1 5·44*	3,880,065	*1 5·90*	**14,327,951**	*1 5·34*
6,112,811	*2 7·71*	6,305,741	*2 5·09*	**24,830,912**	*2 6·05*
19,767	*0 0·10*	87,300	*0 0·40*	**18,639**	*0 0·02*
1,152,451	*0 5·98*	1,252,094	*0 5·78*	**4,840,594**	*0 5·86*
30,837,971	*13 3·96*	33,788,139	*12 11·88*	**129,307,274**	*13 0·48*
149,728	*0 0·78*	208,749	*0 0·97*	**749,593**	*0 0·91*
30,688,243	*13 3·18*	33,579,390	*12 10·91*	**128,557,681**	*12 11·57*
30,413,901	*13 1·76*	35,140,110	*13 6·11*	**132,685,880**	*13 4·57*
274,342	*0 1·42†*	—	—	—	—
—	—	1,560,720	*0 7·20†*	**4,128,199**	*0 5·00†*
727,361		733,371		**737,960**	
17,158,650		18,880,098		**73,040,524**	
16,982,845		18,497,423		**71,265,391**	
10,058,597		10,890,699		**42,078,583**	
44,200,092		48,268,220		**186,384,498**	
2,690,706		2,888,495		**11,220,418**	
cwts. 22·55		cwts. 23·23		**cwts. 22·94**	
s. d. 9 1·63		*s. d.* 9 2·70		**s. d. 9 1·82**	
0 4·34		0 4·53		**0 4·49**	

issued quarterly, viz., Cmd. 4629, 4708, 4774 and 4858 and for the year, viz., Cmd. 4,877. 1934, under the provisions of which the contribution payable to the Miners' Welfare Fund and for subsequent years. To this extent, the *actual* balances are less favourable than as

TABLE 26.—*Tonnage of Coal Produced, Shipped Abroad, and Available for Consumption in Great Britain in the Years* 1913, 1920, *and from* 1929.

A.—General Distribution of the Coal available.

	1913.	1920.	1929.	1930.	1931.	1932.	1933.	1934.
	Million Tons.							
Output of Coal in Great Britain ..	287·35	229·42	257·91	243·88	219·46	208·73	207·11	220·73
Quantity Shipped Abroad :—								
Exports of Coal	73·40	24·93	60·27	54·87	42·75	38·90	39·07	39·66
,, ,, Coke	1·24	1·67	2·90	2·46	2·40	2·23	2·28	2·19
,, ,, Manufactured Fuel ..	2·05	2·26	1·23	1·01	0·76	0·76	0·80	0·73
Coal Shipped for the use of Steamers engaged in the Foreign Trade ..	21·03	13·91	16·39	15·62	14·61	14·21	13·46	13·49
Total Quantity of Coal Shipped Abroad*	98·34	43·68	82·15	75·10	61·65	57·15	56·68	57·09
Coal, and the coal equivalent of coke and manufactured fuel imported and retained	0·02	‡	0·02	0·02	0·02	0·03	0·04	0·05
Quantity of Coal available for Home Consumption for all purposes† ..	183·85	180·72	173·50	166·58	155·68	149·50	148·37	161·48
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Consumption per head of Population	89	85	78	75	69	67	66	71

* Including the coal-equivalent of coke and manufactured fuel. In 1934, 66 tons of gas coke and 68 tons of other sorts of coke were obtained from every 100 tons of coal carbonised, and 94 tons of coal were used for every 100 tons of manufactured fuel made. *See* Tables 32, 33 and 34 and similar tables for previous years.

† These particulars relate to Great Britain only, the necessary adjustments having been made in respect of shipments to and from Ireland.

‡ Less than 5,000 tons.

B.—Consumption of Coal in Great Britain.

Consumer.	1913.	1920.	1929.	1930.	1931.	1932.	1933.	1934.
	Quantity (Million Tons).							
1. Gas Works (excluding the coal equivalent of gas coke exported)	16·7	16·88	16·75	17·00	16·69	16·37	16·16	16·66
2. Electricity Generating Stations belonging to authorised undertakings and to railway and tramway authorities	4·9	7·36	9·84	9·68	9·61	9·81	10·33	11·17
3. Railway Companies (for locomotive use)..	13·2	13·42	13·41	12·87	12·27	11·70	11·67	12·17
4. Vessels engaged in the Coastwise Trade (bunkers)	1·9	1·28	1·37	1·28	1·19	1·19	1·21	1·26
5. Iron Works (used in Blast Furnaces)	21·2	17·83	14·51	11·69	7·11	6·53	7·37	10·40*
6. Other Iron Works and Steel Works†	10·2 (appx.)	12·79	8·92	7·10	5·50	5·16	5·92	6·81*
7. Collieries (engine fuel)	18·0	17·20	13·69	13·51	12·61	12·04	11·59	11·68
8. General Manufactures and all other purposes (including Domestic use)‡	97·7	93·96	95·01	93·45	90·70	86·70	84·12	91·33
Total	183·8	180·72	173·50	166·58	155·68	149·50	148·37	161·48
	ii. Percentage Proportion of Total.							
1. Gas Works	9·1	9·4	9·7	10·2	10·7	10·9	10·9	10·3
2. Electricity Generating Stations belonging to authorised undertakings and to railway and tramway authorities	2·7	4·1	5·7	5·8	6·2	6·6	7·0	6·9
3. Railway Companies (for locomotive use)..	7·2	7·4	7·7	7·7	7·9	7·8	7·8	7·5
4. Vessels engaged in the Coastwise Trade (bunkers)	1·0	0·7	0·8	0·8	0·8	0·8	0·8	0·8
5. Iron Works (used in Blast Furnaces)	11·5	9·8	8·4	7·0	4·5	4·4	5·0	6·5
6. Other Iron Works and Steel Works†	5·5 (appx.)	7·1	5·1	4·3	3·5	3·4	4·0	4·2
7. Collieries (engine fuel)	9·8	9·5	7·9	8·1	8·1	8·1	7·8	7·2
8. General Manufactures and all other purposes (including Domestic use)‡	53·2	52·0	54·7	56·1	58·3	58·0	56·7	56·6
Total	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

* Provisional figure.

† These figures cover only the coal, or its equivalent in coke, used in the manufacture of products coming within the purview of the British Iron and Steel Federation by whom the figures were supplied.

‡ These residuary figures are subject to the changes in the stocks of coal held by producers and consumers, as to which information is not available generally. The same considerations apply to the total consumption figures. The consumption of coal for domestic purposes in private houses, public buildings and institutions, including coal for domestic industries and miners' coal, was estimated after the war at 40,000,000 tons a year. Information as to domestic coal consumption in more recent years is not available.

TABLE 27.—*Quantity and Declared Value of Fuel Exported to each Principal Destination from, and Total Imported and Retained in, Great Britain,* and Quantity of Fuel Shipped for the use of Steamers, etc., engaged in the Foreign Trade (including Fishing Vessels), during the Year* 1934.

Destination.	Coal.		Gas Coke.		Other Sorts of Coke.		Manufactured Fuel.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
EXPORTED (Produce of Great Britain and Northern Ireland).								
	Tons.	£	Tons.	£	Tons.	£	Tons.	£
Irish Free State	1,039,983	925,422	7,613	6,961	2,677	3,767	22	44
Channel Islands	231,876	258,831	474	529	2,287	1,857	233	557
Gibraltar	458,118	313,578	82	78	457	435	—	—
Malta and Gozo	71,329	59,335	207	209	643	612	—	—
Palestine (including Trans-Jordan)	69,309	52,421	—	—	405	615	1,500	1,500
Sierra Leone	31,704	26,566	—	—	10	34	2,530	2,649
Nigeria (inc. British Cameroons)	16,389	13,136	—	—	923	1,518	—	—
Union of South Africa (excl. South-West Africa Territory)	2,198	2,063	—	—	301	290	—	—
Anglo-Egyptian Sudan	—	—	—	—	449	883	13,211	13,251
Mauritius and Dependencies	—	—	25	41	300	421	9,345	9,696
Aden and Dependencies	14,538	13,859	—	—	—	—	—	—
British India	2,403	2,313	2	4	1,808	2,406	—	—
Straits Settlements & Dependencies (including Labuan)	46,280	36,488	130	129	4,350	4,672	—	—
Ceylon and Dependencies	35,332	33,628	—	—	30	55	—	—
Hong-Kong	4,300	4,032	—	—	619	712	—	—
Canada	1,746,707	2,106,023	—	—	35,685	36,073	252	252
Newfoundland and Coast of Labrador	157,318	122,107	—	—	194	440	111	111
British West India Islands	153,442	112,398	21	39	527	623	10,800	9,988
Falkland Islands	11,362	8,393	—	—	284	312	—	—
Other British Countries	20,465	18,459	105	158	2,026	2,998	6,605	6,444
Finland	830,917	525,419	2,342	1,480	54,293	50,521	—	—
Estonia	23,647	17,874	—	—	520	528	—	—
Latvia	401,755	273,170	233	241	9,383	8,651	—	—
Lithuania	184,876	130,484	—	—	12,019	11,314	—	—
Sweden	2,609,737	1,714,479	24,629	10,829	169,641	148,756	—	—
Norway	1,371,014	900,354	244,901	250,574	111,307	93,876	—	—
Denmark (including Faröe Islands)	3,087,503	2,013,045	487,062	465,587	345,145	299,023	—	—
Iceland	106,502	85,751	75	74	2,021	1,980	—	—
Germany	2,540,929	1,713,496	8,834	3,960	106,646	99,104	—	—
Netherlands	1,616,858	1,196,557	116	91	69,979	67,016	—	—
Belgium	972,404	640,862	—	—	—	—	—	—
France	7,669,427	6,998,839	306	291	17,932	17,702	111,406	108,107
Algeria	1,059,985	734,964	295	304	1,330	1,545	75,019	70,894
Tunis	148,334	102,083	—	—	—	—	17,586	17,284
French West and Equatorial Africa	83,805	63,160	—	—	103	114	22,201	20,537
French Somaliland	8,498	6,896	—	—	12	27	4,500	4,387
Syria	8,344	7,220	355	499	250	260	9,350	8,488
Switzerland	194,318	139,562	—	—	3,130	3,167	—	—
Portugal	1,028,490	781,196	20,058	19,420	12,035	13,188	570	595
Azores	11,357	8,949	—	—	297	282	—	—
Madeira	47,874	37,026	—	—	74	89	100	115
Portuguese West Africa (excl. Angola)	46,130	35,502	—	—	—	—	—	—
Angola	1,171	990	—	—	74	118	—	—
Spain	1,341,186	1,162,185	7,184	7,121	42,793	44,125	20,915	20,946
Canary Islands	204,772	164,766	219	222	169	193	—	—
Spanish Ports in North Africa	151,662	112,025	624	631	114	108	100	105
Italy	4,698,651	3,783,652	3,424	3,209	101,261	94,056	131,298	130,870
Yugoslavia	45,415	30,404	—	—	92,350	88,900	—	—
Greece	179,333	148,132	1,499	1,445	7,603	7,438	3,485	2,717
Roumania	13,464	13,356	—	—	1,964	2,304	—	—
Turkey	15,980	7,870	—	—	3,952	4,010	—	—
Egypt	1,448,496	1,155,851	10	8	2,486	2,806	600	600
Morocco	103,463	78,490	—	—	1,313	1,285	18,500	17,257
United States of America	166,284	225,978	—	—	95,720	92,806	—	—
Brazil	717,190	623,608	727	724	12,070	15,223	40,246	36,305
Uruguay	266,562	217,410	970	1,095	8,664	9,384	500	475
Argentine Republic	1,937,066	1,740,400	407	415	14,756	22,609	196,914	170,221
Other Foreign Countries	203,428	153,413	672	816	24,082	25,837	31,173	29,456
Total to British Countries	4,113,053	4,109 072	8,659	8,148	53,975	58,723	44,609	44,492
Total to Foreign Countries	35,546,827	27,745,418	804,942	769,036	1,325,488	1,228,345	684,463	639,359
Grand Total	**39,659,880**	**31,854,490**	**813,601**	**777,184**	**1,379,463**	**1,287,068**	**729,072**	**683,851**
SHIPPED FOR THE USE OF STEAMERS, etc., ENGAGED IN THE FOREIGN TRADE (including Fishing Vessels).								
Total Foreign Bunker Shipments	**13,487,222**	†	—	—	—	—	**95**	†
IMPORTED AND RETAINED.								
Total	**18,027**	**23,404**	**17**	**41**	**25,174**	**26,070**	**1,398**	**11,226**

* And Northern Ireland. † Not Recorded.

TABLE 28.—*Tonnage of Coal Exported to the various Regions Steamers, etc., engaged in the Foreign Trade (including Ports of Great*

Region to which Exported.	Year.	Shipped from East Coast of Scotland. Tonnage.	Scotland. *Percentage Proportion Shipped to each Region.*	North East.* Tonnage.	North East.* *Percentage Proportion Shipped to each Region.*
				(a) Tonnage of	
Baltic Sea ; Soviet Union (Russia), Finland, Estonia, Latvia, Lithuania and Poland (including Dantzig), Sweden, Norway and Denmark (including Faröe Islands).	1934	2,585,161	*56·3*	4,249,041	*31·1*
	1933	2,031,811	*48·6*	3,542,846	*26·4*
	1932	1,620,799	*41·5*	2,560,761	*20·3*
	1931	815,760	*25·4*	1,961,289	*13·7*
	1930	1,330,143	*33·8*	2,555,508	*14·1*
North Sea, English Channel and Irish Sea ; Germany, Netherlands, Belgium, France, Switzerland, Channel Islands and Irish Free State.	1934	1,214,826	*26·4*	5,338,963	*39·0*
	1933	1,299,200	*31·1*	5,926,986	*44·1*
	1932	1,428,124	*36·6*	5,887,638	*46·6*
	1931	1,627,037	*50·6*	8,147,338	*57·0*
	1930	1,744,300	*44·4*	10,836,365	*60·0*
Western Mediterranean ; Portugal, Spain, Italy, Malta, Gibraltar, Morocco, Spanish Ports in North Africa, Algeria, Tunis and Tripoli.	1934	343,232	*7·5*	3,276,957	*24·0*
	1933	369,308	*8·8*	3,100,329	*23·1*
	1932	377,010	*9·7*	3,327,039	*26·4*
	1931	470,146	*14·6*	3,429,325	*24·0*
	1930	524,787	*13·3*	3,921,570	*21·7*
Eastern Mediterranean ; Austria, Hungary, Czechoslovakia, Jugoslavia, Greece, Crete, Bulgaria, Roumania, European Turkey, Asiatic Turkey, Cyprus, Egypt and Anglo-Egyptian Sudan.	1934	32,902	*0·7*	339,496	*2·5*
	1933	28,990	*0·7*	348,817	*2·6*
	1932	34,448	*0·9*	288,679	*2·3*
	1931	69,346	*2·2*	449,869	*3·2*
	1930	61,476	*1·5*	399,260	*2·2*
West Coast of Africa, Azores, Madeira, Canary Islands and St. Helena.	1934	2,999	*0·1*	131,730	*1·0*
	1933	3,007	*0·1*	111,542	*0·8*
	1932	3,819	*0·1*	115,449	*0·9*
	1931	4,503	*0·1*	150,682	*1·1*
	1930	3,281	*0·1*	139,302	*0·8*
East Coast of Africa, Union of South Africa, Madagascar, Réunion, Mauritius and Dependencies, and Seychelles.	1934	—	—	—	—
	1933	—	—	—	—
	1932	—	—	—	—
	1931	—	—	—	—
	1930	—	—	3,505	*0·0*
Arabia, Indian Ocean and Continent, Malay Archipelago, Oceania and Further Asia.	1934	—	—	1,488	*0·0*
	1933	—	—	—	—
	1932	2,000	*0·0*	17,494	*0·1*
	1931	412	*0·0*	30,573	*0·2*
	1930	2,508	*0·1*	73,549	*0·4*
North and Central America	1934	364,552	*7·9*	269,270	*2·0*
	1933	363,873	*8·7*	323,787	*2·4*
	1932	389,900	*10·0*	361,762	*2·9*
	1931	189,556	*5·9*	62,287	*0·4*
	1930	226,418	*5·8*	32,353	*0·2*
South America and Other Regions†	1934	52,764	*1·1*	60,996	*0·4*
	1933	83,644	*2·0*	79,866	*0·6*
	1932	46,565	*1·2*	67,559	*0·5*
	1931	38,513	*1·2*	60,331	*0·4*
	1930	39,422	*1·0*	111,307	*0·6*
All Regions (Total Tonnage Exported and Percentage Proportion Shipped from each Group of Ports).	1934	4,596,436	*11·6*	13,667,941	*34·5*
	1933	4,179,833	*10·7*	13,434,173	*34·4*
	1932	3,902,665	*10·0*	12,626,381	*32·5*
	1931	3,215,273	*7·5*	14,291,694	*33·4*
	1930	3,932,335	*7·2*	18,072,719	*32·9*
				(b) Tonnage of Coal shipped for the use of	
Total Foreign Bunkers and Percentage Proportion shipped from each Group of Ports	1934	1,262,207	*9·4*	2,717,852	*20·2*
	1933	1,214,839	*9·0*	2,707,045	*20·1*
	1932	1,224,817	*8·6*	3,034,682	*21·4*
	1931	1,138,065	*7·8*	3,240,434	*22·2*
	1930	1,289,618	*8·3*	3,214,237	*20·6*

* And Northern Ireland.
† Including Falkland Islands, Southern Whale Fisheries

of the World, and Tonnage of Coal shipped for the use of Fishing Vessels), from each of the Principal Groups of Britain, from 1930.

Great Britain.		Shipped from West Coast of Great Britain.						Total Shipped from Great Britain* (including coal shipped from Ports other than those specified).	
Humber.		Bristol Channel.		North West.		Scotland.			
Tonnage.	Percentage Proportion Shipped to each Region.	Tonnage.	Percentage Proportion Shipped to each Region.	Tonnage.	Percentage Proportion Shipped to each Region.	Tonnage.	Percentage Proportion Shipped to each Region.	Tonnage.	Percentage Proportion Shipped to each Region.
Coal Exported.									
1,090,579	33·2	238,280	1·5	21,443	4·7	208,717	15·8	8,574,686	21·6
857,308	26·4	239,860	1·5	6,042	1·0	88,281	7·9	6,886,186	17·6
720,641	21·6	167,957	1·0	—	—	59,391	4·7	5,267,972	13·5
556,985	13·2	207,167	1·1	2,458	0·2	35,402	2·7	3,668,319	8·6
1,106,309	17·9	274,354	1·2	8,851	0·7	46,126	3·0	5,436,578	9·9
1,336,537	40·7	5,428,891	34·1	370,180	81·9	379,115	28·8	14,265,795	36·0
1,461,880	44·9	5,799,559	36·1	517,071	86·5	428,926	38·4	15,691,862	40·2
1,653,907	49·6	6,144,355	37·2	753,045	94·6	634,892	50·6	16,802,509	43·2
2,805,645	66·4	6,570,881	36·5	1,097,080	92·1	685,688	52·5	21,337,140	49·9
3,693,147	59·7	8,462,578	36·3	1,181,154	89·4	720,561	46·4	27,031,580	49·3
105,634	3·2	4,851,701	30·5	12,158	2·7	473,428	35·9	9,086,050	22·9
156,082	4·8	4,568,748	28·5	6,595	1·1	407,773	36·6	8,645,811	22·1
137,953	4·1	4,740,679	28·7	2,846	0·4	350,903	27·9	8,969,008	23·1
255,640	6·0	5,625,393	31·2	3,065	0·3	370,784	28·4	10,176,214	23·8
326,477	5·3	6,872,668	29·5	7,369	0·5	524,529	33·8	12,177,400	22·2
88,900	2·7	1,256,973	7·9	26,063	5·8	23,294	1·8	1,791,198	4·5
105,467	3·3	1,100,442	6·8	50,420	8·4	6,810	0·6	1,646,401	4·2
165,559	5·0	1,168,724	7·1	25,483	3·2	8,074	0·6	1,690,967	4·3
38,960	0·9	1,505,266	8·4	59,098	5·0	7,029	0·6	2,130,776	5·0
180,554	2·9	1,931,291	8·3	86,139	6·5	11,259	0·7	2,669,979	4·8
11,995	0·4	294,540	1·8	4,483	1·0	—	—	445,783	1·1
16,268	0·5	373,007	2·3	3,468	0·6	—	—	507,323	1·3
14,650	0·4	373,962	2·3	6,383	0·8	—	—	514,349	1·3
9,530	0·2	520,365	2·9	8,273	0·7	—	—	693,415	1·6
19,357	0·3	660,797	2·8	9,010	0·7	—	—	831,793	1·5
—	—	32,199	0·2	—	—	—	—	32,199	0·1
—	—	35,858	0·2	—	—	—	—	35,859	0·1
—	—	39,441	0·2	1,226	0·2	2,779	0·2	43,447	0·1
—	—	31,350	0·2	2,503	0·2	6	0·0	33,859	0·1
5,762	0·1	51,083	0·2	—	—	1	0·0	60,351	0·1
—	—	93,435	0·6	8,496	1·9	19,211	1·5	122,630	0·3
7,891	0·2	108,393	0·7	6,604	1·1	16,677	1·5	139,565	0·4
258	0·0	145,452	0·9	3,281	0·4	10,659	0·9	179,144	0·5
7,322	0·2	177,842	1·0	3,556	0·3	4,413	0·3	224,118	0·5
283,330	4·6	271,617	1·2	9,283	0·7	4,273	0·3	644,560	1·2
60,874	1·9	1,388,874	8·7	869	0·2	193,131	14·7	2,279,552	5·8
91,830	2·8	1,564,127	9·7	638	0·1	160,801	14·4	2,505,856	6·4
150,070	4·5	1,335,946	8·1	186	0·0	140,090	11·2	2,378,017	6·1
75,519	1·8	872,567	4·8	7,381	0·6	152,257	11·7	1,359,783	3·2
30,931	0·5	1,007,235	4·3	3,679	0·3	160,806	10·4	1,461,922	2·7
586,612	17·9	2,333,047	14·7	8,097	1·8	20,471	1·5	3,061,987	7·7
557,474	17·1	2,274,172	14·2	7,097	1·2	6,808	0·6	3,009,063	7·7
492,539	14·8	2,387,213	14·5	3,036	0·4	48,874	3·9	3,053,388	7·9
477,329	11·3	2,492,960	13·9	7,121	0·6	49,842	3·8	3,126,116	7·3
541,331	8·7	3,766,976	16·2	16,333	1·2	84,503	5·4	4,559,902	8·3
3,281,131	8·3	15,917,940	40·1	451,789	1·1	1,317,367	3·3	39,659,880	100·0
3,254,200	8·3	16,064,166	41·1	597,935	1·5	1,116,076	2·9	39,067,926	100·0
3,335,577	8·6	16,503,729	42·4	795,486	2·1	1,255,662	3·2	38,898,801	100·0
4,226,930	9·9	18,003,791	42·1	1,190,535	2·8	1,305,421	3·1	42,749,740	100·0
6,187,198	11·3	23,298,599	42·5	1,321,818	2·4	1,552,058	2·8	54,874,065	100·0
Steamers, &c., engaged in the Foreign Trade (including Fishing Vessels).									
2,738,115	20·3	2,946,939	21·8	1,923,325	14·3	1,067,947	7·9	13,487,222	100·0
2,841,270	21·1	2,977,766	22·1	1,877,225	13·9	1,054,408	7·8	13,457,081	100·0
2,722,890	19·2	3,220,653	22·7	1,996,921	14·1	1,100,616	7·7	14,209,237	100·0
2,731,265	18·7	3,094,098	21·2	2,248,000	15·4	1,118,119	7·6	14,609,545	100·0
2,679,047	17·2	3,496,481	22·4	2,417,127	15·6	1,201,742	7·7	15,616,691	100·0

Northern Whale Fisheries, Greenland and Iceland.

TABLE 29.—*Tonnage of Coal Exported from Great Britain**

Note.—Owing to the territorial changes arising out of the Great War

Destination.	1909–1913. Yearly Average.	1913.	1919.	1920.	1921.	1922.	1923.	1924.	1925.
									Thousand
Europe and the Mediterranean.									
Russia and Succession States	4,008	5,998	221	93	402	1,272	1,481	1,226	927
Sweden	4,094	4,563	1,592	1,373	1,233	2,523	3,168	3,550	2,727
Norway	2,069	2,298	1,331	800	694	1,567	1,610	1,822	1,750
Denmark (inc. Faröe Islands)	2,848	3,034	1,743	1,040	1,804	2,866	3,170	3,551	2,783
Germany	8,999	8,952	4	13	818	8,346	14,806	6,824	4,165
Netherlands	2,162	2,018	402	240	1,788	6,068	6,794	2,744	1,527
Belgium	1,707	2,031	144	671	618	3,489	6,505	3,330	2,486
France	10,647	12,776	16,205	11,693	6,396	13,579	18,827	14,535	10,235
Portugal	1,024	1,202	544	302	436	784	766	886	850
Spain	2,190	2,534	806	290	1,021	1,711	1,146	1,499	1,756
Italy	9,183	9,647	4,641	2,905	3,385	6,342	7,607	6,706	6,811
Austria-Hungary	951	1,057	143	99	—	3	—	—	—
Greece	604	728	139	98	249	429	463	642	609
Algeria	1,055	1,282	523	511	455	1,032	1,060	1,244	1,120
Irish Free State	—	—	—	—	—	—	1,485	2,472	2,244
Channel Islands	169	168	115	124	114	161	164	177	193
Gibraltar	307	355	1,466	1,134	368	689	453	577	473
Malta and Gozo	492	700	734	421	206	214	298	333	225
Egypt (inc. Anglo-Egyptian Sudan)	2,872	3,162	1,698	986	1,025	1,762	1,707	1,813	1,980
Other European and Mediterranean Countries	861	888	619	436	639	720	688	805	899
Total	56,242	63,393	33,070	23,229	21,651	53,557	72,198	54,736	43,760
Africa and Asia.									
Canary Islands	930	1,115	262	382	160	525	611	687	486
Azores and Madeira	167	155	130	116	20	95	69	101	70
French West Africa	111	149	264	111	49	119	144	113	90
Portuguese West Africa	278	233	270	281	107	194	242	241	198
Aden and Dependencies	170	181	49	29	70	93	64	79	71
British India	217	179	—	1	532	999	85	101	94
Ceylon and Dependencies	268	240	13	14	140	233	169	170	159
Straits Settlements and Dependencies (including Labuan)	25	30	—	6	43	75	20	45	56
Hong Kong	35	52	12	6	29	34	17	40	38
Other Countries	394	426	83	108	205	294	282	242	285
Total	2,595	2,760	1,083	1,054	1,355	2,661	1,703	1,819	1,547
South America.									
Chile	691	589	7	7	23	84	19	67	100
Brazil	1,604	1,887	189	158	242	1,013	1,152	798	1,097
Uruguay	895	724	185	118	222	503	405	420	373
Argentine Republic	3,129	3,694	639	274	887	2,021	2,461	3,116	2,645
Other Countries	71	65	39	47	51	70	126	92	98
Total	6,390	6,959	1,059	604	1,425	3,691	4,163	4,493	4,313
North and Central America.									
Canada	48	38	—	—	2	831	369	280	568
Newfoundland and Coast of Labrador	37	56	—	—	9	82	50	17	64
United States of America	11	6	4	—	25	3,100	758	101	379
British West Indies	31	25	15	1	16	59	45	27	19
Other Countries	51	47	—	13	12	68	53	27	17
Total	178	172	19	14	64	4,140	1,275	452	1,047
Other Destinations	116	116	19	31	166	149	120	151	150
Grand Total	65,521	73,400	35,250	24,932	24,661	64,198	79,459	61,651	50,817

* Up to 1st April, 1923, the figures cover exports from Great Britain and Ireland and shipments from Great Britain and Northern Ireland and shipments from these countries to the Irish Free

to the Principal Destinations from 1909 *to* 1913 *and from* 1919.

comparisons between pre- and post-war figures are not in all cases exact.

1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.	Destination.
Tons.									
									Europe and the Mediterranean.
203	758	538	712	547	357	946	1,063	1,506	Russia and Succession States.
665	2,182	1,540	2,336	1,767	1,074	1,365	1,984	2,610	Sweden.
789	1,574	1,117	1,444	1,202	647	867	983	1,371	Norway.
1,093	2,150	1,731	2,194	1,921	1,590	2,090	2,857	3,088	Denmark (inc. Faröe Islands).
1,518	4,241	5,368	5,521	4,926	3,769	2,308	2,360	2,541	Germany.
621	2,315	2,430	3,123	2,860	2,274	1,770	1,587	1,617	Netherlands.
831	2,233	2,259	4,140	3,445	1,979	1,591	1,431	972	Belgium.
3,792	9,262	9,065	13,045	12,969	10,554	8,886	8,696	7,669	France.
331	850	962	1,050	1,136	1,024	906	992	1,028	Portugal.
785	2,361	1,867	1,783	1,712	1,310	1,079	1,077	1,341	Spain.
3,143	6,792	6,622	7,095	7,167	5,908	5,054	4,793	4,699	Italy.
—	—	11	4	—	—	—	—	7	Austria-Hungary.
290	679	637	589	530	354	166	132	179	Greece.
524	1,462	1,737	1,808	1,435	1,292	1,222	1,013	1,060	Algeria.
1,034	2,408	2,423	2,456	2,469	2,425	1,930	1,255	1,040	Irish Free State.
111	215	192	209	238	211	215	221	232	Channel Islands.
151	354	373	348	210	138	204	267	458	Gibraltar.
85	244	160	185	103	93	94	81	71	Malta and Gozo.
1,029	2,200	2,222	2,303	1,817	1,513	1,279	1,302	1,448	Egypt (inc. Anglo-Egyptian Sudan).
373	928	894	1,033	862	801	759	776	781	Other European and Mediterranean Countries.
17,368	43,208	42,148	51,378	47,316	37,313	32,731	32,870	33,718	Total.
									Africa and Asia.
232	532	448	456	364	342	281	247	205	Canary Islands.
42	65	69	67	56	48	40	58	59	Azores and Madeira.
53	131	271	216	146	105	81	95	84	French West Africa.
91	331	240	300	177	145	67	67	47	Portuguese West Africa.
26	62	50	62	32	18	24	21	15	Aden and Dependencies.
15	56	28	22	18	17	12	3	6	British India.
47	116	80	112	80	41	37	41	31	Ceylon and Dependencies.
5	85	59	91	30	23	37	47	46	Straits Settlements and Dependencies (inc. Labuan).
13	57	24	6	6	19	17	6	4	Hong Kong.
87	258	273	374	304	165	130	94	95	Other Countries.
611	1,693	1,542	1,706	1,213	923	726	679	592	Total.
									South America.
53	46	58	40	2	6	1	—	—	Chile.
553	1,415	1,751	1,809	1,204	664	815	735	717	Brazil.
154	391	308	395	301	263	291	270	267	Uruguay.
1,099	2,949	2,659	2,799	2,688	2,091	1,846	1,852	1,937	Argentine Republic.
57	181	178	228	127	43	10	19	16	Other Countries.
1,916	4,982	4,954	5,271	4,322	3,067	2,963	2,876	2,937	Total.
									North and Central America.
156	835	629	745	975	906	1,615	1,722	1,747	Canada.
1	43	45	23	48	68	137	171	157	Newfoundland and Coast of Labrador.
431	122	374	335	393	301	234	242	166	United States of America.
14	84	94	46	31	58	187	190	153	British West Indies.
15	26	16	23	15	27	205	181	57	Other Countries.
617	1,110	1,158	1,172	1,462	1,360	2,378	2,506	2,280	Total.
84	156	249	740	561	87	101	137	133	**Other Destinations.**
20,596	51,149	50,051	60,267	54,874	42,750	38,899	39,068	39,660	**Grand Total.**

between Great Britain and Ireland are excluded. From 1st April, 1923, the figures cover shipments
State are included as exports.

TABLE 30.—*Quantity and Declared Value (f.o.b.) of Coal Exported from Great Britain and Northern Ireland during the Year* 1934, *distinguishing the Kind and Quality of the Coal Exported.*

Kind of Coal.	Quality of Coal.				
	Small.	Sized.	Through and Through.	Large.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.
Anthracite	651,288	2,504,510	—	987,367	4,143,165
Steam	3,541,487	8,765,489	3,405,785	11,854,941	27,567,702
Gas	264,921	792,847	2,522,527	88,271	3,668,566
Household	32	173,069	4,813	574,741	752,655
Other Sorts	1,134,881	138,597	2,246,530	7,784	3,527,792
Total	5,592,609	12,374,512	8,179,655	13,513,104	39,659,880
	Percentage Proportion.				
	%	%	%	%	%
Anthracite	1·6	6·3	—	2·5	10·4
Steam	8·9	22·1	8·6	29·9	69·5
Gas	0·7	2·0	6·4	0·2	9·3
Household	0·0	0·4	0·0	1·5	1·9
Other Sorts	2·9	0·4	5·6	0·0	8·9
Total	14·1	31·2	20·6	34·1	100·0
	Value f.o.b.				
	£	£	£	£	£
Anthracite	259,244	3,926,724	—	1,658,511	5,844,479
Steam	1,959,003	6,061,132	2,480,224	9,940,417	20,440,776
Gas	155,254	586,481	1,809,815	68,129	2,619,679
Household	21	138,192	3,808	556,908	698,929
Other Sorts	686,405	101,234	1,456,733	6,255	2,250,627
Total	3,059,927	10,813,763	5,750,580	12,230,220	31,854,490
	Average Value per ton, f.o.b.				
	s. *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
Anthracite	8 0	31 4	—	33 7	28 3
Steam	11 1	13 10	14 7	16 9	14 10
Gas	11 9	14 10	14 4	15 5	14 3
Household	*	16 0	*	19 5	18 7
Other Sorts	12 1	14 7	13 0	16 1	12 9
Total	10 11	17 6	14 1	18 1	16 1

* Less than 5,000 tons exported.

TABLE 31. *Coal, Coke and Patent Fuel Transported by Sea, Rail and Canal, etc., from* 1925.

(a) Tonnage of Coal Shipped Coastwise and for the use of Vessels engaged in Coastwise Trade, from each of the Principal Groups of Ports of Great Britain and Northern Ireland.

Year.	Shipped from East Coast of Great Britain.						Shipped from West Coast of Great Britain.						Shipped from Great Britain and Northern Ireland (including shipments from Ports other than those specified).
	Scotland.		North East.		Humber.		Bristol Channel.		North West.		Scotland.		
	Tonnage.	Percentage of Total.	Tonnage.	Percentage of Total.	Tonnage.	Percentage of Total.	Tonnage.	Percentage of Total.	Tonnage.	Percentage of Total.	Tonnage.	Percentage of Total.	Total.
						(*a*) Cargo Shipments.							
1925	1,129,612	7·7	7,617,058	53·0	1,536,224	10·7	1,668,050	11·6	1,241,216	8·6	1,136,529	7·9	**14,378,238**
1926	872,337	11·5	3,744,734	49·4	644,767	8·5	721,918	9·5	585,807	7·7	668,649	8·8	**7,584,468**
1927	1,901,879	11·6	8,889,340	54·4	1,286,516	7·9	1,655,643	10·1	1,049,857	6·4	1,471,918	9·0	**16,338,103**
1928	2,151,088	12·5	9,864,248	57·4	1,161,457	6·8	1,668,579	9·7	1,047,932	6·1	1,244,532	7·2	**17,196,109**
1929	2,260,909	11·9	11,373,555	60·0	992,657	5·2	1,735,554	9·2	1,129,750	6·0	1,397,625	7·4	**18,947,454**
1930	2,336,834	12·7	10,801,049	58·6	1,091,988	5·9	1,608,235	8·7	1,108,205	6·0	1,393,490	7·6	**18,419,564**
1931	2,280,647	12·4	10,763,666	58·6	1,305,357	7·1	1,447,204	7·9	1,010,122	5·5	1,457,208	7·9	**18,381,217**
1932	2,702,418	14·3	10,817,548	57·2	1,297,214	6·9	1,366,147	7·2	949,082	5·0	1,618,589	8·6	**18,915,908**
1933	2,835,852	14·5	11,297,487	57·9	1,262,213	6·5	1,310,865	6·7	917,050	4·7	1,710,350	8·8	**19,496,673**
1934	2,983,126	14·0	12,653,121	59·3	1,240,425	5·8	1,559,359	7·3	1,007,950	4·7	1,748,603	8·2	**21,352,267**
						(*b*) Bunker Coal.							
1925	173,779	12·9	289,014	21·4	94,307	7·0	166,373	12·3	299,993	22·2	217,369	16·1	**1,352,544**
1926	148,509	17·3	151,971	17·7	36,618	4·3	78,674	9·1	198,644	23·1	126,657	14·7	**860,271**
1927	235,663	17·2	333,100	24·3	66,511	4·9	132,589	9·7	287,204	21·0	201,043	14·6	**1,368,042**
1928	249,425	17·8	348,727	24·8	75,447	5·4	133,825	9·5	280,807	20·0	200,742	14·8	**1,403,986**
1929	276,708	17·8	403,681	26·0	69,482	4·5	149,186	9·6	306,261	19·7	214,208	13·8	**1,550,728**
1930	237,237	16·4	400,321	27·6	72,679	5·0	147,431	10·2	277,498	19·1	194,665	13·4	**1,450,198**
1931	213,811	16·0	370,671	27·7	71,396	5·3	136,179	10·2	259,052	19·3	186,614	13·9	**1,339,115**
1932	231,863	17·9	370,251	27·7	71,245	5·3	130,038	9·7	246,669	18·5	184,477	13·8	**1,335,294**
1933	234,111	17·4	382,526	28·4	72,495	5·4	140,507	10·4	241,854	17·9	176,892	13·1	**1,347,664**
1934	237,611	16·9	402,471	28·7	68,575	4·9	149,736	10·7	262,442	18·7	189,288	13·5	**1,402,438**

(b) Tonnage of Coal, Coke and Patent Fuel Carried on British Railways, and Canals, Waterways, etc.

Carried by	1925.	1926.	1927†.	1928.	1929.	1930.	1931.	1932.	1933.	1934.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Rail :*										
Freight Traffic	193,661,991	114,098,398	195,769,382	187,328,581	207,130,109	193,288,726	173,680,226	167,193,574	165,451,965	173,988,041
Free-hauled Traffic ..	15,431,420	11,537,749	16,076,650	14,381,192	14,262,362	13,788,021	12,856,939	12,206,372	12,031,212	12,664,046
Total	209,093,411	125,636,147	211,846,032	201,709,773	221,392,471	207,076,747	186,537,165	179,399,946	177,483,177	186,652,087
Canals, Waterways, etc.* ..	7,555,758	5,246,927	7,066,400	6,744,058	6,751,344	6,269,381	5,618,663	5,428,569	5,391,499	5,611,787

* Excluding Manchester Ship Canal.

† Owing chiefly to alterations affecting the accounts of receipts and expenditure attributable to the railway and to each of the ancillary businesses, the particulars shown for 1927 and subsequently, are not strictly comparable with those for previous years.

TABLE 32.—*Tonnage of Coal Carbonised at Coke Ovens, and of Coke, Breeze and Gas obtained therefrom, and Number and Kind of Coke Ovens in use in Great Britain during the Year* 1934.

Note.—Particulars in respect of ovens situated at Gas Works are excluded from this Table but included in Table 33.

(*a*) All Types of Ovens.

District.	Quantity of Coal Carbonised.	Output of		Average Monthly Number of Ovens in use.			
		Coke.	Breeze.	Non-recovery		By-Product.	Total.
				Bee-hive.	Other kinds.		
	Tons.	Tons.	Tons.				
North East Coast (including Durham and North Riding of Yorkshire)	5,786,192	4,097,108	182,780	254	—	2,042	2,296
Cumberland	523,768	353,088	14,549	—	—	262	262
Lancashire, Cheshire and North Wales	667,190	482,841	28,778	20	—	174	194
Yorkshire, Lincolnshire, Derbyshire, Essex and Northamptonshire	7,039,488	4,573,238	392,968	255	—	2,278	2,533
Staffordshire and Salop	464,658	294,444	40,540	—	—	195	195
South Wales, Monmouthshire and Gloucestershire	1,734,259	1,240,681	77,031	96	149	683	928
Scotland	676,910	470,938	25,849	90	—	349	439
Great Britain	**16,892,465**	**11,512,338**	**762,495**	**715**	**149***	**5,983**	**6,847**
Corresponding figures for 1933	*13,103,434*	*8,778,643*	*671,873*	*606*	*65*	*5,208*	*5,879*

* Coppée (non-recovery) ovens.

(*b*) By-Product Ovens.—(i) Coke and Breeze Production.

District.		Quantity of Coal Carbonised.	Output of	
			Coke.	Breeze.
		Tons.	Tons.	Tons.
North East Coast (including Durham and North Riding of Yorkshire)		5,627,222	3,994,340	182,163
Cumberland		523,768	353,088	14,549
Lancashire, Cheshire and North Wales		655,828	476,020	28,578
Yorkshire, Lincolnshire, Derbyshire, Essex and Northamptonshire		6,909,983	4,501,725	391,355
Staffordshire and Salop		464,658	294,444	40,540
South Wales and Monmouthshire		1,602,585	1,157,810	76,422
Scotland		637,588	446,558	22,931
Great Britain	Waste Heat Ovens	4,609,685	3,270,293	139,655
	Regenerative Ovens	11,811,947	7,953,692	616,883
	Total	**16,421,632**	**11,223,985**	**756,538**
Corresponding figures for 1933		*12,736,956*	*8,558,307*	*665,734*

Note.—The average monthly number of ovens in use in 1934 included 1,355 Otto-Hilgenstock, 1,270 Koppers, 1,147 Simon Carvés, 470 Coppée, 462 Semet-Solvay, 334 Simplex, 252 Becker, 198 Carl Still, 196 Huessener, 133 Wilputte, 78 Kogag, 24 Piette, 9 Collin, 6 Cleveland, 4 Knowles, and 45 other kinds.

Of the total number, 2,212 were waste heat ovens and 3,771 were regenerative ovens.

(*b*) By-Product Ovens—(ii) Gas : Production and Disposal.

District.	Production and Disposal of Oven Gas.					
	Total Production.	Used by Coke Oven Owners.		Sold.		Balance.
		For Heating Ovens.	For all other purposes including Supplies to Owners' Collieries, Works, &c.	To Gas Undertakings.	To other Independent Undertakings.	
	Million Cubic Feet.					
North East Coast (including Durham and North Riding of Yorkshire)	62,454·0	41,348·9	11,428·2	4,725·2	4,250·0	701·7
Cumberland	5,787·8	3,269·5	2,475·9	—	42·4	—
Lancashire, Cheshire and North Wales	7,038·7	3,743·9	1,929·7	1,187·8	149·5	27·8
Yorkshire, Lincolnshire, Derbyshire, Essex and Northamptonshire	74,825·6	40,503·4	17,621·0	10,864·8	2,943·1	2,893·3
Staffordshire and Salop	4,876·3	3,004·4	1,816·3	55·6	—	—
South Wales and Monmouthshire	15,293·7	8,939·9	4,534·4	473·0	891·5	454·9
Scotland	6,794·0	5,708·5	340·3	745·2	—	—
Great Britain	**177,070·1**	**106,518·5**	**40,145·8**	**18,051·6**	**8,276·5**	**4,077·7**
Corresponding figures for 1933	*137,491·6*	*81,269·3*	*31,790·2*	*15,941·0*	*6,240·1*	*2,251·0*

TABLE 33.—*Quantity of Coal used in the Manufacture of Gas, Quantity of Coke (including Breeze) made, and Quantity and Value at Works of the Coke (including Breeze) sold in Great Britain during the Year* 1934.

District.	Quantity of Coal used in the Manufacture of Gas.	Quantity of Coke and Breeze made.	Quantity of Coke and Breeze sold.	Value at Works of Coke and Breeze sold.
	Tons.	Tons.	Tons.	£
England	15,768,699	10,560,543	6,795,624	7,081,507
Wales and Monmouthshire ..	432,794	273,705	149,770	148,914
Scotland	1,669,006	1,002,209	651,969	488,484
Isle of Man	24,166	12,197	10,828	14,000
Great Britain and the Isle of Man	**17,894,665**	**11,848,654**	**7,608,191**	**7,732,905**
Corresponding figures for 1933 ..	*17,355,842*	*11,472,940*	*7,615,487*	*7,522,085*

NOTE.—Particulars in respect of coal carbonised at coke ovens situated at Gas Works are included. The sales in 1934 included 5,429,038 tons of coke and 441,692 tons of breeze, the value of which, at works, was £6,002,757 and £135,473, respectively. Separate particulars of the quantity and value of coke and breeze making up the balance of sales were not supplied. The bulk of the coke and breeze not sold is used at the gas works for heating retorts in the production of coal gas, in generators in the production of water gas, for driving engines, etc.

TABLE 34.—*Quantity and Kind of Coal used in the Manufacture of Briquettes or Manufactured Fuel, and Quantity and Value of Briquettes produced therefrom at Works in Great Britain during the Year* 1934.

District.	Briquettes or Manufactured Fuel made.		Quantity of Coal used in the Manufacture of Briquettes or Manufactured Fuel.				
	Quantity.	Value.*	Steam.	Household.	Anthracite.	Other sorts.	Total.
	Tons.	£	Tons.	Tons.	Tons.	Tons.	Tons.
England	43,152	53,814	17,295	21,831	2,070	—	41,196
Wales and Monmouthshire ..	786,329	698,904	735,703	2,101	2,996	1,689	742,489
Scotland	47,743	63,180	270	43,456	270	—	43,996
Great Britain	**877,224**	**815,898**	**753,268**	**67,388**	**5,336**	**1,689**	**827,681**
Corresponding figures for 1933 ..	*940,723*	*889,756*	*788,214*	*77,731*	*10,401*	*4,247*	*880,593*

* The value represents the selling price at the place of manufacture.

TABLE 35.—*Quantity of Barytes (excluding Witherite) Raised in Great Britain, Imported and Retained, Exported, and Available for Consumption at Home from* 1922.

Year.	Production.	Imports Retained.*	Total.	Exports (Home Produce).*	Available for Consumption at Home.
	Tons.	Tons.	Tons.	Tons.	Tons.
1922	31,728	34,245	65,973	4,410	61,563†
1923	29,607	37,063	66,670	5,254	61,416†
1924	43,097	39,037	82,134	5,515	76,619
1925	40,901	44,868	85,769	5,012	80,757
1926	35,237	38,868	74,105	4,179	69,926
1927	40,160	34,774	74,934	655	74,279
1928	41,857	36,511	78,368	4,718	73,650
1929	47,938	46,626	94,564	2,202	92,362
1930	50,610	47,257	97,867	1,449	96,418
1931	38,224	31,041	69,265	1,862	67,403
1932	50,381	23,588	73,969	2,156	71,813
1933	61,509	33,143	94,652	1,561	93,091
1934	63,582	35,699	99,281	2,389	96,892

* Including imports into, and exports from, Northern Ireland. For the years 1922 to 1926 the imports and exports of Blanc Fixé are also included as separate particulars are not available. In 1927 the imports and exports of the latter were 2,590 tons and 265 tons, respectively.

† Exclusive of barytes produced in the Irish Free State during 1922 and the first 3 months of 1923, the bulk of which was probably consumed in Great Britain. In 1921, the latest year for which such particulars are available, 4,600 tons of barytes were obtained in the counties of Cork and Sligo.

TABLE 36.—*Quantity of Iron Ore and Ironstone Raised in Great Britain,* Imported and Retained, and Available for Consumption at Home from* 1913.

Year.	Iron Ore and Ironstone Raised.						Iron Ore Imported and Retained.	Iron Ore and Ironstone Available for Consumption. ‡
	West Coast Hematite (Non-Phosphoric).	Jurassic.		From Coal Measures.	Other Occurrences. †	Total.		
		Cleveland.	Other Sorts.					
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1913 ..	1,767,038	6,010,800	6,555,484	1,542,053	115,919	15,991,344	7,441,063	24,013,498
1914 ..	1,630,682	5,653,837	6,038,508	1,419,691	113,657	14,856,375	5,697,054	21,142,262
1915 ..	1,656,494	4,797,094	6,498,697	1,123,650	139,591	14,215,526	6,197,140	21,088,597
1916 ..	1,608,353	4,333,273	6,271,123	1,116,392	144,299	13,473,440	6,933,754	21,118,591
1917 ..	1,569,324	4,832,148	7,034,967	1,219,753	165,072	14,821,264	6,189,655	21,650,933
1918 ..	1,515,901	4,567,963	7,257,994	1,121,175	132,384	14,595,417	6,581,728	21,804,512
1919 ..	1,213,677	3,718,017	6,164,242	1,041,231	102,826	12,239,993	5,200,746	17,696,668
1920 ..	1,257,388	3,717,880	6,666,600	950,004	85,798	12,677,670	6,499,551	19,648,049
1921 ..	335,649	1,003,949	1,857,189	229,515	44,214	3,470,516	1,887,642	5,572,922
1922 ..	839,801	1,169,754	4,480,072	273,152	73,728	6,836,507	3,472,575	10,602,667
1923 ..	1,190,036	2,079,964	6,964,745	548,794	91,672	10,875,211	5,860,467	16,985,710
1924 ..	1,051,283	2,234,447	7,172,574	499,738	92,547	11,050,589	5,927,359	17,235,282
1925 ..	951,873	2,284,186	6,464,031	343,021	99,717	10,142,878	4,381,896	14,728,684
1926 ..	497,123	976,562	2,464,290	122,451	33,960	4,094,386	2,087,725	6,350,030
1927 ..	1,240,990	2,529,894	7,013,005	297,707	125,005	11,206,601	5,163,489	16,577,846
1928 ..	1,172,428	2,272,124	7,268,066	369,651	180,054	11,262,323	4,439,866	15,914,015
1929 ..	1,391,756	2,673,903	8,524,102	417,041	208,141	13,214,943	5,689,342	19,148,705
1930 ..	1,134,088	2,167,905	7,835,189	350,603	139,448	11,627,233	4,137,899	16,008,825
1931 ..	709,143	1,496,748	5,330,266	72,657	17,046	7,625,860	2,118,716	9,944,287
1932 ..	551,697	1,083,168	5,482,677	149,194	61,454	7,328,190	1,794,846	9,346,714
1933 ..	632,894	1,012,753	5,614,976	94,691	106,406	7,461,720	2,706,996	10,389,541
1934 ..	813,199	1,641,921	7,840,703	142,963	148,060	10,586,846	4,358,979	15,193,740

* Including particulars for Ireland up to the year 1921.

† Not including iron ore raised in Wiltshire, which is used for other purposes than iron-making.

‡ Including "Purple Ore," or residue of cupreous iron pyrites, imported. Allowance has also been made for British iron ore exported.

NOTE.—The average percentage of metal in the mineral varies in the case of British iron ore and ironstone from about 20 to 55 per cent. and averaged 30 per cent. of the clean raw mineral. Imported ore is mainly hematite and contains more than 50 per cent. of iron. In 1934 the quantity of iron contained in the British iron ore and ironstone raised was 3,176,000 tons. Together with the metal equivalent of the iron ore imported, the residue of cupreous iron pyrites imported, and allowing for a small quantity of British iron ore exported, the quantity of iron contained in the iron ore and ironstone available for consumption at home is estimated at 5½ millions tons, approximately. In the production of pig iron, cinder, scale and scrap are used in addition to iron ore.

TABLE 37.—*Quantity and Average Net Selling Value of Limestone, Igneous Rocks, Sandstone and Gravel and Sand obtained in 1934 and 1933, distinguishing the Principal Purposes for which they were used.*

Note.—The particulars for 1934 are not in all cases strictly comparable with those for 1933 owing to some changes in classification adopted in 1934.

Purpose for which used.	1934.			1933.		
	Quantity.		Average Value per ton.	Quantity.		Average Value per ton.
	Tons.	Percentage of Total.		Tons.	Percentage of Total.	
(a) Limestone (including Dolomite).						
		%	s. d.		%	s. d.
Lime and cement making	4,133,000	28·2	3 0			
Artificial stone	52,000	0·4	4 8	3,892,000	29·8	3 3
Concreting*	148,000	1·0	3 7			
Building stone (including monumental stone)	167,000	1·1	26 6	196,000	1·5	22 11
Paving, kerbs, etc.	14,000	0·1	16 7	22,000	0·2	10 10
Roadmaking and ballasting	6,022,000	41·1	4 3	5,642,000	43·2	4 5
As flux in blast furnaces	2,072,000	14·1	3 0	1,509,000	11·5	3 1
As a refractory material (Dolomite)	488,000	3·3	3 3	376,000	2·9	3 3
Chemical industries	915,000	6·2	4 0	843,000	6·5	4 0
Glassmaking	87,000	0·6	5 0	71,000	0·5	5 4
Other uses and mineral not classified	574,000	3·9	3 10	512,000	3·9	3 8
All Purposes	14,672,000	100·0	3 11	13,063,000	100·0	4 1
(b) Igneous Rocks.						
		%	s. d.		%	s. d.
Building stone (including monumental stone)	92,000	1·0	26 7	70,000	0·8	28 6
Artificial stone	165,000	1·9	4 7	373,000	4·2	4 8
Concreting*	184,000	2·1	4 8			
Roadmaking and ballasting	8,240,000	92·9	5 3	8,086,000	91·9	5 5
Kerbs, setts, flagstones, etc.	159,000	1·8	32 4	172,000	2·0	34 2
Other uses and mineral not classified	29,000	0·3	3 7	94,000	1·1	3 11
All Purposes	8,869,000	100·0	5 11	8,795,000	100·0	6 1
(c) Sandstone.						
		%	s. d.		%	s. d.
Building stone (including monumental stone)	389,000	10·2	23 2	368,000	10·8	23 11
Artificial stone	53,000	1·4	4 3	480,000	14·1	4 2
Concreting*	418,000	11·0	4 3			
Roadmaking and ballasting	2,129,000	56·0	4 4	1,825,000	53·7	4 4
Kerbs, setts, flagstones, etc.	189,000	5·0	25 10	176,000	5·2	25 8
As a refractory material (Ganister, Silica Stone and Silica Sand)	532,000	14·0	6 11	447,000	13·2	6 10
Grindstones, pulpstones, scythestones, etc.	11,000	0·3	65 8	8,000	0·2	76 8
Other uses and mineral not classified	78,000	2·1	11 1	93,000	2·8	9 10
All Purposes	3,799,000	100·0	8 0	3,397,000	100·0	8 2
(d) Gravel and Sand.						
		%	s. d.		%	s. d.
Building (including brickmaking)	10,331,000	73·5	2 8			
Artificial stone	60,000	0·4	3 3	8,951,000	77·0	2 8
Cementing and Concreting*	268,000	1·9	3 9			
Roadmaking and ballasting	2,502,000	17·8	3 6	1,961,000	16·9	3 4
Moulding and pig-bed sand	714,000	5·1	3 2	572,000	4·9	3 4
Glassmaking	120,000	0·9	4 8	102,000	0·9	4 8
Other uses and mineral not classified	60,000	0·4	3 8	36,000	0·3	4 1
All Purposes	14,055,000	100·0	2 11	11,622,000	100·0	2 10

* Including mineral disposed of for cementing and concreting when the ultimate use was unknown. Broken stone, etc., used for concreting in building and constructional operations (other than roadmaking) is also included.

TABLE 38.—*Quantity and Declared Value of the Principal Minerals and Manufactures thereof (other than Coal) Imported and Retained in, and Exported from, Great Britain* during the Year* 1934.

Kind of Mineral or Manufacture.	Quantity.		Value.	
	Imported and Retained.	Exported. †	Imported and Retained.	Exported. †
(i) Metalliferous Ores and Manufactures thereof.				
Iron and Steel.—	Tons.	Tons.	£	£
Iron Ore :				
Manganiferous	45,736	30	62,138	267
Other Sorts (except Chrome Iron Ore and Pyrites)	4,313,243	3,226	3,617,115	9,630
Iron and Steel, Scrap and Waste, fit only for the recovery of metal	347,464	222,974	851,737	522,806
Iron and Steel and Manufactures thereof (Total)	1,363,437	2,250,246	9,109,794	35,089,450
Manganese ore	202,067	‡	532,791	‡
Chromium ore (Chromite or Chrome Iron Ore)	36,543	15	113,682	251
Aluminium.—				
Bauxite	161,168	‡	243,120	‡
Copper.—				
Copper Ore (including Regulus, Matte, Precipitate, and Cement Copper)	39,409	386	929,951	10,041
Copper, Scrap and Old Metal, fit only for the recovery of metal	1,350	4,236	39,167	125,442
Copper Manufactures (including unwrought, etc.)	273,402	36,911	8,880,216	1,721,193
Sulphate of Copper	29	39,845	817	553,848
Iron Pyrites (including Cupreous Pyrites)	334,894	1,525	382,435	767
Lead.—				
Lead Ore and Concentrates	131	45,160	1,298	300,111
Lead Manufactures (including Pig Lead)	311,778	12,123	3,514,208	222,483
Red Lead and Orange Lead	1,350	5,190	24,466	123,628
White Lead (Basic Carbonate) dry	4,135	1,644	96,702	53,084
Tin.—				
Tin Ores and Concentrates	38,513	§	5,181,577	18
Tin Manufactures (including Soft Solder and Tin Blocks, Ingots, Bars and Slabs)	7,568	19,483	1,742,293	4,292,234
Arsenic.—				
White Arsenic	5,803	24	73,730	527
Other Arsenic Compounds	114	113	5,633	3,040
Zinc.—				
Zinc Ore and Concentrates	90,469	3,973	274,344	18,628
Zinc Crude and Manufactures	146,831	7,662	2,319,206	175,694
Zinc Oxide	624	12,373	11,653	237,201
(ii) Other Minerals.				
Barytes, not ground	20,804	115	30,565	585
Barytes, ground	14,895	2,274	59,195	11,214
Gypsum, burnt (including Plaster of Paris and other Gypseous Cements)	9,985	15,631	17,609	44,811
Gypsum, unburnt (including Alabaster)	106,452	‡	70,445	‡
Fluorspar	‡	4,528	‡	8,271
Boron Minerals (Crude and Concentrate of Boracite and Rasorite)	14,468	5	99,377	167
Talc, Steatite and Soapstone.—				
Not ground	381	‡	4,138	‡
Ground (including French Chalk)	18,370	97	94,850	1,689
Salt (Sodium Chloride).—				
Rock	12,373	9,616	16,879	18,595
Vacuum	3,283	83,139	7,201	271,997
Other	29,102	173,710	29,583	404,993
Chalk, prepared (including Whiting)	1,880	24,256	5,611	84,513
Clay.—				
Ball	167	50,054	618	76,309
China	443	402,724	2,345	646,171
Fireclay	5,947	25,630	13,032	37,377
Other Sorts	9,423	12,868	74,971	37,249
Felspar (including China Stone)	16,884	7,421	34,517	15,863
Sand, unground (other than Monazite Sand)—				
Silica Sand	162,311	‡	101,335	‡
Other Sorts	109,340	‡	75,026	‡
Sand, ground (including ground Silica, Silica Flour and ground Flint)	30,565	3,133	52,313	14,600
Stones and Slates, wholly or mainly unmanufactured—				
Granite, raw in blocks	17,303	416	55,777	1,023
Crushed Macadam and Chippings of Granite	277,682	184	148,238	123
Not elsewhere specified in official Import and Export List	22,046	3,172	42,902	4,944
Stones and Slates, wholly or mainly manufactured—				
Slates for Roofing	32,298	5,327	152,409	55,272
All other Stones and Slates	135,658	6,758	916,114	110,464

* And Northern Ireland. † Produce of Great Britain and Northern Ireland. ‡ Particulars are not available.
§ Less than ½ ton.

TABLE 39.—*Average Declared Value per ton, f.o.b., at each of the Principal Ports, of all classes of Coal (including Anthracite) Exported in each Month of* 1934, *together with the Annual Average Value for the Years* 1934, 1933, 1932, 1931 *and* 1913.

Port of Shipment.	Average Declared Value per ton, f.o.b., of Coal Exported in																					
	Jan., 1934.	Feb., 1934.	Mar., 1934.	April, 1934.	May, 1934.	June, 1934.	July, 1934.	Aug., 1934.	Sept., 1934.	Oct., 1934.	Nov., 1934.	Dec., 1934.	Year 1934.	Year 1933.	Year 1932.	Year 1931.	Year 1913.
England and Wales.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
Blyth	12 7	12 6	12 7	12 7	12 6	12 8	12 7	12 6	12 10	13 1	13 0	13 4	12 9	12 1	12 10	13 6	12 7
Newcastle (including North and South Shields)	12 10	13 1	13 1	12 11	13 0	12 10	12 11	12 8	12 9	12 11	13 1	13 1	12 11	12 11	13 1	13 6	12 4
Sunderland ..	13 9	13 9	13 7	14 0	13 10	13 7	14 0	13 9	13 10	13 8	14 1	13 9	13 10	13 10	14 0	14 3	12 11
Hull	15 6	15 7	15 5	15 6	15 4	14 9	15 1	15 8	15 1	16 1	15 5	15 11	15 5	15 0	14 8	14 3	13 9
Newport	17 1	17 1	17 0	17 3	17 5	17 1	17 3	17 0	16 11	17 4	17 1	17 4	17 2	17 1	17 3	17 3	15 3
Cardiff	17 1	17 1	17 3	17 3	17 4	17 1	17 4	17 3	17 3	17 4	17 1	17 4	17 3	17 3	17 5	17 7	15 10
Port Talbot ..	18 4	18 4	17 8	20 8	21 0	20 6	22 0	21 8	20 7	21 4	20 0	20 1	20 2	19 7	19 7	18 0	13 2
Swansea	24 7	22 10	21 8	24 9	23 8	23 10	26 6	24 2	22 3	23 10	25 3	26 2	24 2	25 6	25 0	24 2	14 8
Liverpool ..	19 5	18 8	19 4	19 8	19 4	18 4	18 6	18 10	17 11	19 1	19 7	20 0	19 0	18 6	20 2	20 10	14 11
Scotland.																	
Glasgow	19 8	20 10	16 11	17 11	18 8	20 9	17 6	21 5	17 3	20 2	18 3	15 11	18 9	18 10	18 9	19 2	13 6
Burntisland ..	14 3	14 3	13 4	12 8	12 10	13 2	13 4	13 3	13 2	13 3	13 4	13 7	13 4	13 3	12 9	13 0	12 9
Leith	14 4	14 2	13 0	12 8	12 8	12 6	12 9	12 6	12 10	12 11	12 10	13 8	13 0	12 5	11 11	12 4	11 9
Methil and Kirkcaldy	13 8	13 4	12 9	12 1	12 0	11 10	12 4	12 5	12 9	12 10	13 1	13 4	12 8	12 3	11 10	13 2	11 7
All Ports. (Annual Average.)																	
1934	**16 2**	**15 10**	**15 7**	**16 0**	**15 11**	**15 11**	**16 3**	**15 10**	**16 1**	**16 6**	**16 4**	**16 3**	**16 1**	—	—	—	—
1933	**16 3**	**15 11**	**16 1**	**16 1**	**16 3**	**15 11**	**16 1**	**16 0**	**16 2**	**16 3**	**16 2**	**15 10**	—	**16 1**	—	—	—
1932	**15 11**	**15 9**	**15 10**	**16 1**	**16 5**	**16 4**	**16 7**	**16 4**	**16 7**	**16 3**	**16 8**	**16 4**	—	—	**16 3**	—	—
1931	**15 8**	**16 3**	**16 0**	**16 1**	**16 4**	**16 4**	**16 3**	**16 2**	**16 5**	**16 5**	**16 4**	**16 2**	—	—	—	**16 3**	—
1913	**13 5**	**13 6**	**13 8**	**14 0**	**14 0**	**14 1**	**13 11**	**13 10**	**13 10**	**13 10**	**13 10**	**13 11**	—	—	—	—	**13 10**

TABLE 40.—*Average Declared Value per ton, f.o.b., and the Percentage Proportion of each principal Kind of Coal Exported in* 1913 *and from* 1927.

Period.	ANTHRACITE.			STEAM.				GAS.		HOUSE-HOLD.	OTHER SORTS.	
	Small.	Sized.	Large.	Small.	Sized.	Through and Through.	Large.	Sized.	Through and Through.	Large.	Small.	Through and Through.
A.—Average Declared Value per Ton, f.o.b.												
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
Yearly Average:												
1913	13 11		17 8	10 10		12 5	15 5	*	12 4	13 6	*	12 4
1927	10 0	38 8	33 4	12 9	16 8	15 7	19 6	18 6	16 2	20 8	13 11	16 0
1928	8 4	31 11	28 5	11 3	14 6	14 1	16 11	14 6	14 4	18 11	12 6	13 7
1929	8 10	31 2	30 4	11 9	15 4	14 8	17 6	15 0	14 8	20 3	12 6	14 2
1930	10 1	32 8	31 7	12 8	14 9	15 2	17 8	15 2	15 4	20 2	13 4	14 7
1931	8 7	32 4	31 5	11 8	14 1	14 1	17 6	14 8	14 7	20 7	12 5	13 5
1932	8 2	32 2	32 0	11 1	13 10	14 2	17 1	14 7	14 5	19 6	12 5	13 2
1933	7 10	32 1	33 0	11 1	13 8	14 3	16 11	14 7	14 6	19 1	11 10	12 11
1934	8 0	31 4	33 7	11 1	13 10	14 7	16 9	14 10	14 4	19 5	12 1	13 0
Monthly Average: 1934.												
January ..	7 3	34 8	33 6	11 4	14 5	14 8	17 2	15 5	14 2	19 6	11 8	12 11
February ..	7 8	34 9	33 11	11 1	14 6	14 3	17 2	15 0	14 5	19 11	12 0	13 0
March ..	8 0	35 4	33 7	11 3	14 0	14 5	17 3	14 7	14 4	19 1	12 1	13 0
April	8 5	30 5	33 5	11 2	13 5	14 10	17 0	14 10	14 4	19 8	12 3	13 1
May	8 3	29 0	33 9	10 10	13 5	14 6	16 6	15 1	14 5	19 6	12 2	13 0
June	7 10	29 11	32 11	11 1	13 5	14 7	16 6	14 0	14 2	19 5	12 0	12 10
July	8 2	30 5	34 1	10 8	13 6	14 6	16 4	14 10	14 5	19 2	12 1	13 1
August	8 0	30 0	32 11	10 9	13 6	14 8	16 3	14 9	14 6	18 10	12 3	12 10
September ..	8 2	31 0	33 9	11 1	13 10	14 7	16 8	14 9	14 4	19 4	12 2	13 0
October	7 9	31 4	33 2	11 2	13 11	14 7	16 11	15 1	14 3	18 11	12 2	12 11
November ..	8 3	30 11	34 0	11 2	14 0	14 7	16 8	14 9	14 5	19 6	12 1	13 0
December ..	8 3	35 0	34 2	11 1	14 4	14 7	17 1	14 9	14 4	19 11	12 3	12 11
B.—Percentage Proportion of Total Tonnage Exported.												
	%	%	%	%	%	%	%	%	%	%	%	%
Year:												
1913	1·9		2·2	17·6		4·8	54·3	*	12·8	1·8	*	2·5
1927	2·2	1·9	2·0	14·5	8·3	7·3	40·3	0·4	11·4	3·2	1·6	5·4
1928	1·9	2·7	1·8	12·8	10·5	9·2	37·1	1·0	11·0	3·2	1·4	5·7
1929	2·2	3·0	1·8	11·9	13·4	8·2	34·2	1·4	9·5	2·8	1·3	8·3
1930	1·9	3·5	2·1	10·9	14·5	8·3	32·8	1·5	9·6	3·1	1·4	8·6
1931	1·5	4·1	2·4	12·1	13·9	8·1	32·0	1·9	9·2	4·2	2·1	7·0
1932	1·4	5·8	2·8	10·9	16·3	8·2	31·6	2·2	7·9	3·1	3·5	4·6
1933	1·5	6·4	2·5	10·2	19·6	7·6	30·7	2·1	7·1	1·9	3·6	5·0
1934	1·6	6·3	2·5	8·9	22·1	8·6	29·9	2·0	6·4	1·5	2·9	5·6
Month:												
March, 1934 ..	1·7	3·0	2·1	11·1	20·3	8·7	29·1	2·5	7·9	1·8	4·1	6·0
June, 1934 ..	1·6	6·9	2·8	9·1	21·8	9·3	30·2	1·9	5·7	1·1	3·1	5·1
September, 1934	2·5	7·0	2·5	7·8	24·9	7·7	28·7	1·8	6·2	1·4	3·2	5·1
December, 1934	1·4	4·8	2·4	8·3	23·6	7·6	29·4	2·6	7·4	1·5	2·4	6·3

* Not available. The proportion of small (including sized) gas coal exported in 1913 was 1·3 per cent. of the whole, and of "other sorts" of coal 2·2 per cent. The corresponding figures in 1934 were 2·7 per cent. and 3·3 per cent., of which 2·0 and 2·9 per cent. respectively, was sized gas coal and small coal of "other sorts."

TABLE 41.—*Market Quotations of various kinds of Coal in the Year* 1934.

Note.—Extracted from the "Iron and Coal Trades Review," the "Colliery Guardian," and "O'Connell's Coal and Iron News."

Date.	South Wales Large Steam for Export F.O.B.	South Wales Smokeless Seconds F.O.B.	Durham Gas Coal Prime F.O.B.	Lancashire Best House on Wagon at Pit.	Yorkshire Hards at Pit.	Best Bright Coal at Pit (for London Market).*	Nottingham Best Brights at Pit (for London Market).	Nottingham Small Nuts at Pit (for London Market).	Fifeshire Steam Coal.	
									First Class.	Third Class.
									F.O.B. Methil or Burntisland.	
	Shillings and Pence per Ton.									
1934.										
January 4	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	14/9	14/0
11	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	15/0	14/0
18	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	15/0	14/0
25	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	14/6	13/6
February 1	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	14/0	13/0
8	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	13/9—14/0	12/9—13/0
15	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	12/9—13/0	12/0—12/6
22	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	12/6—12/9	12/0—12/6
March 1	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	12/6—12/9	12/0—12/6
8	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	12/3—12/6	11/6—12/0
15	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	12/3—12/6	11/6—12/0
22	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	12/3—12/6	11/6—12/0
29	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	12/6	11/6
April 5	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	17/6—19/0	12/6	11/6
12	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	16/0—18/0	13/0	11/0
19	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	16/0—18/0	13/0—13/6	11/0
26	18/3—18/6	18/9—19/0	14/5—14/8	28/2—29/8	17/0—18/6	27/6	22/0—25/0	16/0—18/0	13/6	11/3—11/6
May 3	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	17/0—18/6	23/6	19/0—23/0	14/6—15/0	13/6—14/0	11/3—11/6
10	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/6—14/0	11/6—12/0
17	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/6—14/0	11/6—12/0
24	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/6—14/0	11/6—12/0
31	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/3	12/0

June	7	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/0—13/3	12/0
	14	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/3—13/6	12/0
	21	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/6—14/0	12/0
	28	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/6—14/0	12/0
July	5	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/9—14/0	12/0
	12	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/3—13/6	12/0
	19	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/3—13/6	12/0
	26	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/6	12/0
August	2	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/6	12/0
	9	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/6	12/0
	16	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/3—13/6	12/0
	23	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	19/0—23/0	14/6—15/0	13/6—13/9	12/0
	30	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	16/0—17/0	23/6	21/0—25/0	16/6—17/0	13/9	12/0—12/6
September	6	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	17/0—18/6	25/6	21/0—25/0	16/6—17/0	13/9	12/0—12/6
	13	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	17/0—18/6	25/6	21/0—25/0	16/6—17/0	13/9	12/0
	20	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	17/0—18/6	25/6	21/0—25/0	16/6—17/0	13/9—14/3	12/0
	27	18/3—18/6	18/9—19/0	14/5—14/8	26/6—28/0	17/0—18/6	25/6	21/0—25/0	16/6—17/0	13/9—14/6	12/0
October	4	18/3—18/6	18/9—19/0	14/5—14/8	28/0—29/6	17/0—18/6	25/6	21/0—25/0	16/6—17/0	13/6—14/0	12/3
	11	18/3—18/6	18/9—19/0	14/5—14/8	28/0—29/6	17/0—18/6	25/6	21/0—25/0	16/6—17/0	13/6—13/9	12/6
	18	18/3—18/6	18/9—19/0	14/5—14/8	28/0—29/6	17/0—18/6	25/6	21/0—25/0	16/6—17/0	13/3—13/6	12/6
	25	18/3—18/6	18/9—19/0	14/5—14/8	28/0—29/6	17/0—18/6	25/6	21/0—25/0	16/6—17/0	13/3—13/6	12/6—13/0
November	1	18/3—18/6	18/9—19/0	14/5—14/8	28/0—29/6	17/0—18/6	25/6	21/0—25/0	16/6—17/0	13/0—13/3	12/6—13/0
	8	18/3—18/6	18/9—19/0	14/5—14/8	28/0—29/6	17/0—18/6	25/6	21/0—25/0	16/6—17/0	13/0	12/6—13/0
	15	18/3—18/6	18/9—19/0	14/5—14/8	28/0—29/6	17/0—18/6	25/6	21/0—25/0	16/6—17/0	13/0—13/6	12/6—13/0
	22	18/3—18/6	18/9—19/0	14/5—14/8	28/0—29/6	17/0—18/6	25/6	21/0—25/0	16/6—17/0	13/0—13/6	12/6—13/0
	29	18/3—18/6	18/9—19/0	14/5—14/8	28/0—29/8	17/0—18/6	25/6	21/0—25/0	16/6—17/0	13/6—13/9	12/9—13/0
December	6	18/3—18/6	18/9—19/0	14/5—14/8	28/0—29/8	17/0—18/6	27/6	21/0—25/0	16/6—17/0	13/9—14/0	12/9—13/0
	13	18/3—18/6	18/9—19/0	14/5—14/8	28/0—29/8	17/0—18/6	27/6	21/0—25/0	16/6—17/0	13/9—14/0	13/0—13/3
	20	18/3—18/6	18/9—19/0	14/5—14/8	28/0—29/8	17/0—18/6	27/6	21/0—25/0	16/6—17/0	14/0	13/0—13/3
	27	18/3—18/6	18/9—19/0	14/5—14/8	28/0—29/8	17/0—18/6	27/6	21/0—25/0	16/6—17/0	14/0	13/0—13/3

* Information specially supplied.

TABLE 42.—*Plant and Equipment in use at Mines under the Coal Mines Act, in Great Britain in* 1913, 1920 *and each Year from* 1925, *so far as particulars are available.*

N.B.—Particulars of the number of machines and plant in use relate generally to the end of the year except in 1929 and following years, when particulars of Electric Motors and of Safety Lamps in use relate to 30th June.

Year.	Number of Mines at Work.	Coal-cutting Machines.				Electric Motors in use.				Safety Lamps in use.			
		Total Number in use driven by		Coal cut by Machines.		Below-ground.		Above-ground.		Flame Lamps.		Electric Lamps.	
		Compressed Air.	Electricity	Tonnage.	*Percentage Proportion of Total Output.*	Number.	Horse Power.	Number.	Horse Power.	Total.	*Percentage Proportion of Total Safety Lamps in use.*	Total.	*Percentage Proportion of Total Safety Lamps in use.*
				Thousands.	%						%		%
1913 ..	3,267	1,590	1,305	24,368	*8*	Not available.	371,417	Not available.	256,652	740,001	*95*	37,823	*5*
1920 ..	2,838	2,918	2,153	30,194	*13*		618,763		461,944	635,127	*72*	245,900	*28*
1925 ..	2,721	3,516	3,134	48,133	*20*	17,920	840,401	15,121	715,834	526,916	*59*	365,823	*41*
1926 ..	2,840	3,398	3,114	27,778*	*22*	18,367	852,045	15,890	768,100	493,325	*57*	370,123	*43*
1927 ..	2,861	3,638	3,478	58,472	*23*	19,332	878,311	16,763	805,812	465,251	*55*	385,902	*45*
1928 ..	2,539	3,545	3,586	61,388	*26*	19,548	897,660	17,147	824,672	416,018	*53*	375,186	*47*
1929 ..	2,419	3,574	3,787	71,950	*28*	20,268	918,116	17,530	835,588	401,510	*51*	383,333	*49*
1930 ..	2,328	3,597	4,040	75,756	*31*	21,589	954,784	18,390	861,680	379,551	*49*	389,238	*51*
1931 ..	2,243	3,345	4,026	76,864	*35*	21,858	960,921	18,804	872,615	337,345	*47*	387,251	*53*
1932 ..	2,158	3,167	3,970	80,286	*38*	22,282	970,131	19,476	885,131	295,521	*43*	391,142	*57*
1933 ..	2,126	2,938	4,211	87,826	*42*	22,914	984,408	20,309	904,194	270,417	*41*	391,272	*59*
1934 ..	2,123	2,955	4,451	103,701	*47*	24,310	1,022,104	21,032	927,082	242,901	*38*	394,820	*62*

Year.	Mechanical Conveyors in use Below-ground.						Mechanical Picks and Drills in use.			Coal Cleaning.				
	At Coal Face.†		Elsewhere.		Tonnage of Coal conveyed.	*Percentage Proportion of Total Output.*	Pneumatic Picks for		Drills for Boring Shot-holes.	Number of Plants in use.			Coal Treated.	
	Driven by:—		Driven by:—				Coal getting.§	Ripping, etc.		Washeries.	Dry Cleaning.	Froth Flotation.	Tonnage.	*Percentage Proportion of Total Output.‡*
	Compressed Air.	Electricity.	Compressed Air.	Electricity.										
					Thousands.	%							Thousands.	%
1927 ..	1,344	734	Not	available.	Not	available.	5,679			505	27	6	51,440	*20*
1928 ..	1,311	892	317	336	27,976	*12*	934	1,318	5,504	527	53	5	60,326	*25*
1929 ..	1,534	1,064	350	270	37,150	*14*	1,383	1,622	5,876	562	74	6	71,331	*28*
1930 ..	1,676	1,315	394	362	42,495	*17*	2,214	1,953	6,057	583	91	6	72,715	*30*
1931 ..	1,661	1,476	394	422	47,308	*21*	2,557	2,173	6,112	570	109	6	66,655	*30*
1932 ..	1,665	1,600	381	474	52,666	*25*	2,665	2,243	6,069	594	128	6	71,576	*34*
1933 ..	1,839	1,878	446	593	62,156	*30*	3,576	2,367	6,392	604	141	5	77,470	*37*
1934 ..	1,942	2,148	534	745	81,493	*37*	4,465	2,709	6,615	611	151	5	87,458	*40*

* In this year the output of coal (and consequently the quantity of coal cut by machines) was reduced by a protracted dispute.

† The number of Conveyors in use at the Coal-face in 1913 was 359, and from 1920 to 1926, 823, 818, 928, 1,157, 1,373, 1,513 and 1,667, respectively.

‡ In relation to the output of coal which is generally suitable for cleaning, i.e., fine or small coal, the proportion actually so treated is in general considerably higher than is indicated above by the percentage of the total output of coal.

§ Including picks used for getting down coal undercut by coal-cutting machines. For the years 1930 to 1934, the numbers of such picks were 371, 347, 302, 596 and 713, respectively.

TABLE 43.—(a) *Electrical Equipment;* (b) *Coal-cutting Machines and Mineral cut;* (c) *Conveyors and Loaders used Below ground and Coal conveyed;* (d) *SafetyLamps in use;* (e) *Explosives used, Shots Fired and the number of Miss-fire Shots; and* (f) *Horses employed Below ground, and the Casualties to them at Mines under the Coal Mines Act in Great Britain in the Year* 1934.

	ENGLAND AND WALES.																					Total for England and Wales.*	SCOTLAND.				Total for Scotland.	GREAT BRITAIN.	
	Northumberland.	Durham.	Cumberland and Westmorland.	Lancashire and Cheshire.	Yorkshire, South.	Yorkshire, West.	Nottinghamshire.	Derbyshire, North.	Derbyshire, South.	Staffordshire, North.	Cannock Chase.	Staffordshire, South, and Worcestershire.	Leicestershire.	Warwickshire.	Shropshire.	Forest of Dean.	Somersetshire.	Bristol.	Kent.	South Wales and Monmouthshire.	North Wales.		Fife, Clackmannan, Kinross and Sutherland.	Lothians (Mid and East) and Peebles.	Lanark, Linlithgow, Stirling, Renfrew and Dumbarton.	Ayrshire, Dumfries and Argyll.		Year 1934.	*Year 1933.*
TOTAL NUMBER OF MINES AT WORK	102	228	26	170	121	118	46	99	14	81	39	70	16	20	41	34	13	3	4	459	27	1,753	46	32	232	60	370	2,123	*2,126*
A.—ELECTRICAL EQUIPMENT.—(30th June, 1934).																													
Number of Mines at which Equipment is installed	66	155	15	108	86	84	44	54	11	25	24	18	15	17	10	9	10	3	4	290	10	1,069	41	28	146	44	259	1,328	*1,336*
Number of Electric Motors in use	4,037	5,457	421	2,388	4,485	1,996	2,660	2,377	244	1,064	1,338	213	483	1,184	108	286	190	56	401	5,654	351	35,623	2,213	1,609	4,688	1,209	9,719	45,342	*43,223*
Aggregate Horse-power of the Electric Motors in use:																													
Below ground—	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*	*H.P.*
Haulage	23,850	70,914	3,334	19,790	37,977	14,183	24,176	19,175	2,748	8,768	11,746	1,085	3,701	11,201	722	3,648	1,792	557	2,645	85,351	3,626	354,602	17,302	13,074	27,551	7,140	65,067	419,669	*411,162*
Conveyors and Loaders	4,728	3,359	87	842	3,296	275	4,733	2,852	265	981	1,906	64	752	1,962	—	60	90	12	769	242	437	27,912	3,955	2,591	4,449	1,004	11,999	39,911	*33,208*
Pumping	23,951	57,536	2,375	20,157	21,725	10,131	5,462	16,256	1,662	8,259	2,255	1,780	1,246	3,689	811	10,502	2,072	1,575	10,411	84,387	1,041	291,030	31,490	20,891	45,247	11,740	109,368	400,398	*394,892*
Portable { Coal-cutting Machines	23,985	15,328	1,072	3,209	8,243	2,743	9,270	8,910	1,291	1,412	4,345	295	2,383	3,538	240	220	150	188	335	2,285	989	91,036	8,528	3,652	19,995	6,012	38,187	129,223	*115,932*
Machinery { Other Machinery	308	231	25	34	217	226	145	105	20	54	21	1	70	20	25	—	—	—	40	131	26	1,749	127	231	338	110	806	2,555	*1,762*
Auxiliary Ventilation	427	1,294	190	297	292	10	169	20	1	5	114	105	11	102	—	32	97	2	105	218	9	3,501	1,703	792	2,671	434	5,600	9,101	*8,302*
Miscellaneous	1,469	3,206	491	230	4,568	1,289	257	843	75	45	69	55	—	306	—	395	131	—	—	2,927	265	16,809	2,075	776	1,326	261	4,438	21,247	*19,150*
Total	78,718	152,118	7,574	44,559	76,318	28,857	44,212	48,161	6,062	19,524	20,956	3,385	8,163	20,818	1,798	14,857	4,332	2,334	14,305	175,541	6,393	786,639	65,180	42,007	101,577	26,701	235,465	1,022104	*984,408*
Above ground—																													
Winding	16,589	25,022	200	8,054	12,359	4,055	12,123	2,369	—	138	2,133	40	170	956	11	680	—	—	2,300	58,840	—	148,457	4,990	760	4,348	702	10,800	159,257	*153,860*
Ventilation	7,327	23,261	1,103	3,662	14,944	5,217	5,235	4,266	145	2,152	855	155	180	978	168	297	110	100	2,450	41,209	600	115,241	1,857	1,126	5,034	1,398	9,415	124,656	*123,355*
Haulage	3,925	16,257	290	1,972	4,469	1,776	1,150	1,708	395	1,241	1,801	480	298	1,148	281	753	210	72	26	31,517	249	72,008	1,807	1,215	5,387	997	9,406	81,414	*80,005*
Coal Cleaning or Screening	11,140	22,793	2,258	12,195	31,849	13,844	14,049	10,511	339	3,566	4,142	1,313	1,457	3,333	226	444	226	100	1,589	30,785	2,355	168,827	7,106	3,915	10,105	2,480	23,606	192,433	*184,138*
Miscellaneous	11,109	53,085	3,374	22,480	60,353	15,655	23,637	15,309	496	12,107	5,547	774	1,176	6,960	379	966	817	163	4,740	106,371	2,239	349,129	3,841	5,796	8,570	1,986	20,193	369,322	*362,336*
Total	50,090	140,418	7,225	48,363	123,974	40,547	56,194	34,163	1,375	19,204	14,478	2,762	3,282	13,375	1,065	3,140	1,363	435	11,105	269,222	5,443	853,662	19,601	12,812	33,444	7,563	73,420	927,082	*904,194*
Total Below and Above ground	128,808	292,536	14,799	92,922	200,292	69,404	100,406	82,324	7,437	38,728	35,434	6,147	11,445	34,193	2,863	17,997	5,695	2,769	25,410	444,763	11,836	1,640,301	84,781	54,819	135,021	34,264	308,885	1,949,186	*1,888,602*
B.—COAL-CUTTING MACHINES AND MINERAL CUT.—(Year ended 31st December, 1934).																													
Number of Mines at which Machines were in use	62	89	10	79	59	41	38	44	7	27	21	4	10	12	3	2	3	3	2	109	12	637	39	19	110	35	203	840	*809*
Number and Type of Machines in use:—																													
Disc	1	1	2	18	—	52	19	—	—	—	—	—	—	1	—	—	—	—		—	—	94	13	5	126	19	163	257	*292*
Bar	15	28	5	31	—	2	15	7	—	1	5	—	—	—	3	—	—	—		48	—	158	30	25	88	24	167	325	*379*
Chain	667	610	43	281	392	223	300	342	38	201	186	11	78	112	7	6	4	14		368	70	3,953	253	113	523	164	1,053	5,006	*4,688*
Percussive and Other Machines	89	566	13	493	181	162	15	53	6	67	13	2	2	7	—	—	1	1		56	47	1,774	8	—	28	8	44	1,818	*1,790*
Total No. of Machines driven by { Electricity	745	506	38	138	279	96	293	316	42	56	166	13	72	111	10	6	4	15		98	44	3,048	299	138	751	215	1,403	4,451	*4,211*
Compressed Air	27	697	25	685	294	343	56	86	2	213	38	—	8	9	—	—	1	—		374	73	2,931	5	5	14	—	24	2,955	*2,938*
Total Number of Machines	772	1,203	63	823	573	439	349	402	44	269	204	13	80	120	10	6	5	15		472	117	5,979	304	143	765	215	1,427	7,406	*7,149*
Tonnage of Coal cut by Coal-cutting Machines:—	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*		*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Disc	2,949	2,483	19,466	147,482	—	464,103	150,511	—	—	—	—	—	—	9,196	—	—	—	—		—	—	796,190	221,149	63,909	1,518,898	126,339	1,930,295	2,726,485	*2,785,168*
Bar	126,665	259,847	25,440	227,667	—	8,206	147,578	90,101	—	16,302	52,271	—	—	—	8,541	—	—	—		607,881	—	1,570,499	242,762	357,413	826,358	210,584	1,637,117	3,207,616	*3,598,573*
Chain	11,097,665	8,830,128	535,957	4,934,874	9,785,688	4,039,464	8,494,843	6,707,791	561,654	4,961,676	2,322,804	168,966	1,257,928	3,002,909	133,891	102,462	68,981	203,219		4,603,131	1,436,208	73,250,239	6,460,038	2,357,120	8,767,362	2,120,435	19,704,955	92,955,194	*76,837,720*
Percussive and Other Machines	340,453	2,101,588	13,964	992,364	539,748	204,651	11,483	118,603	16,784	103,997	6,164	3,000	1,793	1,670	—	—	1,500	891		24,044	201,801	4,684,498	9,308	—	97,530	20,291	127,129	4,811,627	*4,604,645*
Total Quantity of Coal cut†	11,567,732	11,194,046	594,827	6,302,387	10,325,436	4,716,424	8,804,415	6,916,495	578,438	5,081,975	2,381,239	171,966	1,259,721	3,013,775	142,432	102,462	70,481	204,110		5,235,056	1,638,009	80,301,426	6,933,257	2,778,442	11,210,148	2,477,649	23,399,496	103,700,922	*87,826,106*
Percentage of Total Output cut by Machines	*84*	*37*	*38*	*46*	*36*	*43*	*62*	*59*	*82*	*81*	*48*	*11*	*54*	*59*	*21*	*9*	*10*	*9*		*15*	*59*	*42*	*83*	*57*	*79*	*62*	*75*	47	*42*
C.—CONVEYORS AND LOADERS USED BELOW GROUND, AND COAL CONVEYED.—(Year ended 31st December, 1934).																													
Number of Mines at which Conveyors were in use	29	58	5	57	53	20	31	30	6	22	14	2	7	12	—	1	4	1	3	96	7	458	28	11	48	16	103	561	*509*
Number of Conveyors: Along Coal Face { Electric	261	189	5	52	174	27	276	173	15	47	97		40	88	—	11		39		20	13	1,527	216	109	234	62	621	2,148	*1,878*
Compressed Air	14	99	13	333	233	89	55	40	—	203	18		9	15	—	1		11		707	77	1,917	—	—	25	—	25	1,942	*1,839*
Elsewhere { Electric	117	80	—	22	80	6	62	31	7	23	34		9	52	—	—		7		5	16	551	80	26	58	30	194	745	*593*
Compressed Air	—	28	2	70	98	11	7	10	—	35	2		2	2	—	—		5		234	25	531	—	—	3	—	3	534	*446*
Total Number of Conveyors	392	396	20	477	585	133	400	254	22	308	151		60	157	—	12		62		966	131	4,526	296	135	320	92	843	5,369	*4,756*
Number of Gate-end Loaders { Electric	24	28	4	5	38	9	76	55	5	9	15		11	16	—	—		5		—	—	300	—	75	76	5	172	472	*428*
Compressed Air	—	22	—	22	19	28	30	7	—	13	—		—	1	—	—		—		19	—	161	16	—	4	—	4	165	*136*
Tonnage of Coal Conveyed { Direct into Tubs	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons*		*Tons.*	*Tons.*	*Tons.*	*Tons.*		*Tons.*		*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
With Gate-end Loaders	4,258,700	3,640,353	182,072	5,004,409	9,669,459	734,273	4,117,770	2,124,742	175,853	4,277,640	1,310,259		371,419	2,868,558	—	184,316		1,525,406		8,536,910	1,938,855	50,920,994	5,465,926	651,857	2,543,906	888,355	9,550,044	60,471,038	*45,523,004*
	716,285	1,168,126	55,415	783,752	1,759,557	828,609	4,533,448	2,792,920	80,551	697,732	427,477		394,656	658,370	—	—		155,445		463,623	—	15,516,466	832,216	1,837,342	2,746,433	89,055	5,505,046	21,021,512	*16,632,594*
Total Tonnage of Coal Conveyed	4,974,985	4,808,479	237,487	5,788,161	11,429,016	1,562,882	8,651,218	4,917,662	256,404	4,975,372	1,737,736		766,075	3,527,428	—	184,316		1,680,851		9,000,533	1,938,855	66,437,460	6,298,142	2,489,199	5,290,339	977,410	15,055,090	81,492,550	*62,155,598*

* Including mines under the Coal Mines Act in Cleveland, Lincolnshire and Northamptonshire, particulars of which are not included in the previous columns.

† In addition, the following quantities of minerals were obtained by machine—Ironstone, 130,070 tons; Fireclay, 60,970 tons; Clay, 10,436 tons; and Ganister, 835 tons.

TABLE 43—*continued.*

	ENGLAND AND WALES.																					Total for England and Wales.*	SCOTLAND.					GREAT BRITAIN.	
	Northumberland.	Durham.	Cumberland and Westmorland.	Lancashire and Cheshire.	Yorkshire, South.	Yorkshire, West.	Nottinghamshire.	Derbyshire, North.	Derbyshire, South.	Staffordshire, North.	Cannock Chase.	Staffordshire, South, and Worcestershire.	Leicestershire.	Warwickshire.	Shropshire.	Forest of Dean.	Somersetshire.	Bristol.	Kent.	South Wales and Monmouthshire.	North Wales.		Fife, Clackmannan, Kinross and Sutherland	Lothians (Mid and East) and Peebles.	Lanark, Linlithgow, Stirling, Renfrew and Dumbarton.	Ayrshire, Dumfries and Argyll.	Total for Scotland.	Year 1934.	*Year 1933.*
D.—SAFETY LAMPS IN USE.—(30th June, 1934).																													
Flame Safety Lamps.																													
I. Marsaut	3,649	9,788	944	32,231	18,056	8,032	6,897	7,880	1,246	4,558	7,475	348	1,716	1,956	1,308	—	32	—	—	18,394	5,307	129,913	1,011	247	4,792	945	6,995	136,908	*153,979*
II. Fitted with an Inner Metal Chimney	5,866	33,146	580	3,646	6,962	5,864	4,594	12,235	125	4,201	2,083	1,139	555	1,684	233	—	2	20	449	19,089	2	102,434	359	71	1,891	255	2,576	105,060	*115,320*
III. Others	446	—	6	5	—	370	100	—	—	—	—	—	—	—	—	—	—	—	—	6	—	933	—	—	—	—	—	933	*1,118*
Total Flame Lamps { Used by Workmen	7,594	37,140	1,194	33,517	22,218	12,458	10,293	18,706	1,237	7,886	8,768	1,307	1,928	3,070	1,441	—	24	12	259	32,606	4,969	206,639	801	117	4,982	689	6,589	213,228	} *Not available.*
Used by Officials	2,367	5,769	336	2,353	2,794	1,808	1,241	1,382	131	891	790	180	341	568	99	—	10	8	190	4,883	338	26,552	569	201	1,686	511	2,967	29,519	
Semi-portable lamps	—	25	—	12	6	—	57	27	3	2	—	—	2	2	1	—	—	—	—	—	2	139	—	—	15	—	15	154	
Total	9,961	42,934	1,530	35,882	25,018	14,266	11,591	20,115	1,371	8,759	9,558	1,487	2,271	3,640	1,541	—	34	20	449	37,489	5,309	233,330	1,370	318	6,683	1,200	9,571	242,901	*270,417*
Electric Safety Lamps.																													
Type of Lamp { (*a*) Hand	4,763	29,577	4,383	21,165	67,193	27,183	33,237	25,382	1,386	12,396	13,129	1,905	2,986	9,253	1,138	—	170	256	4,414	92,000	4,357	356,273	249	16	4,595	1,115	5,975	362,248	*362,764*
(*b*) Cap	2,361	1,953	171	690	1,409	1,029	1,022	307	662	225	238	30	97	401	—	—	2	13	305	479	35	11,429	4,466	2,714	10,534	3,429	21,143	32,572	*28,508*
Type of Battery { Alkaline	1,961	5,961	85	11,561	15,967	3,028	6,243	6,369	208	3,155	6,320	1,561	6	4,463	746	—	—	269	6	20,985	1,690	90,584	7	12	2,102	10	2,131	92,715	*63,878*
Lead Acid	5,163	25,567	4,469	10,264	52,635	25,182	27,988	19,320	1,840	9,442	7,037	368	3,077	5,191	392	—	172	—	4,713	71,494	2,702	277,016	4,708	2,718	13,027	4,534	24,987	302,003	*327,353*
Dry Cell	—	2	—	30	—	2	28	—	—	24	10	6	—	—	—	—	—	—	—	—	—	102	—	—	—	—	—	102	*41*
Total Electric Lamps { Used by Workmen	6,940	31,029	4,518	21,171	67,010	27,667	33,254	25,234	1,987	12,283	13,024	1,881	2,963	9,375	1,129	—	162	263	4,587	91,595	4,305	360,377	4,179	2,568	14,177	4,325	25,249	385,626	} *Not available.*
Used by Officials	133	410	35	611	1,425	522	855	346	57	287	339	49	99	249	9	—	10	6	114	844	80	6,480	521	162	901	219	1,803	8,283	
Semi-portable lamps	51	91	1	73	167	23	150	109	4	51	4	5	21	30	—	—	—	—	18	40	7	845	15	—	51	—	66	911	
Total	7,124	31,530	4,554	21,855	68,602	28,212	34,259	25,689	2,048	12,621	13,367	1,935	3,083	9,654	1,138	—	172	269	4,719	92,479	4,392	367,702	4,715	2,730	15,129	4,544	27,118	394,820	*391,272*
Total Number of Safety Lamps in use	17,085	74,464	6,084	57,737	93,620	42,478	45,850	45,804	3,419	21,380	22,925	3,422	5,354	13,294	2,679	—	206	289	5,168	129,968	9,701	601,032	6,085	3,048	21,812	5,744	36,689	637,721	*661,689*

E.—EXPLOSIVES USED, SHOTS FIRED AND NUMBER OF MISS-FIRE SHOTS.—(Year ended 31st December, 1934).

Quantity of Explosives used (*see also* Table 44)	*lb.* 2,644,181	*lb.* 4,512,081	*lb.* 290,618	*lb.* 1,752,733	*lb.* 1,509,109	*lb.* 834,931	*lb.* 610,126	*lb.* 755,510	*lb.* 80,714	*lb.* 911,220	*lb.* 419,491	*lb.* 197,966	*lb.* 326,364	*lb.* 584,082	*lb.* 73,562	*lb.* 46,781	*lb.* 88,339	*lb.* 11,006	*lb.* 44,272	*lb.* 2,196,450	*lb.* 324,268	*lb.* 18,740,061	*lb.* 1,204,020	*lb.* 687,584	*lb.* 3,471,072	*lb.* 747,152	*lb.* 6,109,828	*lb.* 24,849,889	*lb.* *22,701,487*
Estimated Number of Shots Fired by :—																													
Electric Detonator—																													
(i) High Tension	2,578,690	7,652,390	549,065	3,034,620	1,192,657	861,433	385,343	1,069,431	77,020	1,356,079	293,748	2,145	76,402	284,119	54,505	31,200	—	6,634	—	2,732,254	427,997	22,665,732	—	—	527,675	100,093	627,768	23,293,500	*22,472,719*
(ii) Low Tension	395,380	640,700	15,654	1,332,677	2,010,686	1,315,245	969,579	815,448	87,519	564,938	611,488	56,960	307,244	909,052	35,122	27,655	15,495	—	72,756	1,180,369	343,813	11,707,780	733,052	112,579	2,183,664	812,471	3,841,766	15,549,546	*12,507,226*
Fuse	1,001,694	736,436	56,262	47,681	46,677	38,547	16,798	5,134	18,194	79,468	42,165	208,027	201,686	78,859	45,017	26,638	128,264	9,188	—	459,907	6,721	3,476,936	1,522,540	1,317,718	4,144,429	655,976	7,640,663	11,117,599	*10,442,739*
Squib	1,881,147	529,227	2,688	—	—	—	—	—	—	11,055	—	—	—	9,750	—	4,300	—	—	—	69,354	—	3,314,803	—	—	—	5,760	5,760	3,320,563	*2,929,310*
Total	5,836,911	9,558,753	623,669	4,414,978	3,250,020	2,215,225	1,371,720	1,890,013	182,733	2,011,540	947,401	267,132	585,332	1,281,780	134,644	89,793	143,759	15,822	72,756	4,441,884	778,531	41,165,251	2,255,592	1,430,297	6,855,768	1,574,300	12,115,957	53,281,208	*48,411,994*
Number of Miss-fire Shots by :—																													
Electric Detonator—																													
(i) High Tension	238	1,147	72	841	280	171	128	393	13	477	73	—	12	101	10	—	—	—	—	813	71	4,840	—	—	—	19	19	4,859	*5,042*
(ii) Low Tension	11	53	—	234	273	221	301	223	20	160	119	20	30	128	9	4	3	—	6	276	82	2,173	179	4	117	70	370	2,543	*3,061*
Fuse	159	207	28	31	19	14	8	19	8	38	22	101	62	16	13	46	66	2	—	265	14	1,196	308	97	702	183	1,290	2,486	*2,079*
Squib	184	115	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—	114	—	2,046	—	—	—	1	1	2,047	*1,542*
Total	592	1,522	100	1,106	572	406	437	635	41	678	214	121	104	245	32	50	69	2	6	1,468	167	10,255	487	101	819	273	1,680	11,935	*12,924*

F.—HORSES EMPLOYED BELOW GROUND, AND THE CASUALTIES TO THEM.—(Year ended 30th June, 1934).

Number of Mines at which Horses were employed (at 30th June)	63	153	5	8	66	44	41	53	6	9	24	28	12	7	12	10	11	3	—	346	8	921	11	8	47	15	81	1,002	*1,025*
Number of Horses on Colliery Books (at 30th June)	3,356	10,510	148	216	2,574	2,615	2,051	2,540	232	75	1,231	427	590	189	229	242	81	43	—	8,950	192	36,776	47	61	802	65	975	37,751	*39,916*
Number of Cases of Injury caused by Accidents below ground causing :—																													
(i) Death or Destruction	103	320	4	2	101	82	53	62	4	1	56	7	6	2	12	7	1	—	—	244	—	1,071	1	—	29	1	31	1,102	*1,165*
(ii) Unfitness for work for seven consecutive days or more	397	909	12	11	337	316	256	452	42	—	138	51	81	21	24	24	5	8	—	1,512	6	4,682	3	8	71	8	90	4,772	*4,799†*
Number of Horses cast or destroyed by reason of Disease, Old Age or Infirmity	259	916	9	12	225	184	127	196	28	2	51	17	46	6	8	26	—	1	—	661	10	2,797	—	3	44	10	57	2,854	*3,036*
Number of Cases of Ill-treatment reported to Manager	1	10	—	—	2	2	1	11	—	—	4	—	1	—	—	—	—	—	—	2	—	35	—	—	—	—	—	35	*45*

* Including mines under the Coal Mines Act in Cleveland, Lincolnshire and Northamptonshire, particulars of which are not included in the previous columns.
† Includes 534 cases where owners were unable to state whether the period of unfitness was more or less than seven days.

TABLE 44.—*Quantity of Explosives used at Mines, Quarries and certain other Mineral Workings, and the Number of Shots Fired and Number of Miss-fire Shots at Mines under the Coal Mines Act, in Great Britain during the Year* 1934.

Used at	Nitro-Glycerines.	Ammonium Nitrates (Non-nitro-glycerine).	Chorates.	Nitrate Mixtures.	Gun-powder.	Low Density.	Total.
	(*a*) *Quantity* (*lb.*) *of Explosives used at Mines, Quarries and certain other Mineral Workings.*						
Mines under the Coal Mines Act:							
Permitted ..	9,949,472	4,034,588	—	—	—	2,986,199	16,970,259
Other	3,324,458	662,002	—	26,021	3,867,149	—	7,879,630
Total ..	13,273,930	4,696,590	—	26,021	3,867,149	2,986,199	24,849,889
Mines under the Metal-liferous Mines Regulation Acts	1,621,547	26,550	—	—	600,370	—	2,248,467
Quarries under the Quarries Act* ..	1,806,743	1,889,875	252	—	2,822,781	1,199	6,520,850
Other Mineral Workings	2	2,369	—	—	—	—	2,371
Total ..	**16,702,222**	**6,615,384**	**252**	**26,021**	**7,290,300**	**2,987,398**	**33,621,577**
	(*b*) *Estimated Number of Shots Fired at Mines under the* **Coal Mines Act.**						
By Electric Detonator:							
High Tension ..	11,952,682	5,720,509	—	—	513	5,619,796	23,293,500
Low Tension.. ..	9,080,082	3,066,882	—	—	14,924	3,387,658	15,549,546
Total ..	21,032,764	8,787,391	—	—	15,437	9,007,454	38,843,046
By Fuse	6,567,325	1,326,476	—	47,880	2,931,006	244,912	11,117,599
By Squib	—	—	—	—	3,320,563	—	3,320,563
Total ..	**27,600,089**	**10,113,867**	—	**47,880**	**6,267,006**	**9,252,366**	**53,281,208**

Year.	Shots fired by				
	Electric Detonator.		Fuse.	Squib.	Total.
	High Tension.	Low Tension.			
	(*c*) *Number and Proportion of Miss-fire Shots during 1925 and 1934 at Mines under the* **Coal Mines Act.**				
	(i) Number of Miss-fire Shots.				
1925	21,627		8,192	3,710	33,529
1934	4,859	2,543	2,486	2,047	11,935
	(ii) Miss-fire Ratio: ONE in				
1925	1,542		1,641	1,508	1,562
1934	4,794	6,115	4,472	1,622	4,464

* In addition 232,577 lb. of Liquid Oxygen were used as an explosive.

Note.—Blasting Appliances.—In addition 319,659 lb. of Carbon Dioxide were used at Mines under the Coal Mines Act for blasting by means of permitted Cardox Cartridges, the number of shots fired being 224,879 (by Electricity—Low Tension).

TABLE 45.—*Number of Separate Fatal and Non-fatal Accidents at Mines thereby during*

(i.) FATAL ACCIDENTS.

Place or Cause of Accident.	Number of Separate Accidents at Mines under the Coal Mines Act.		Metalliferous Mines Regulation Acts.		All Mines.		Number of Persons Killed at Mines under the Coal Mines Act.		Metalliferous Mines Regulation Acts.		All Mines.	
	Coal Mines *	Stratified Ironstone Mines of Cleveland, Lincolnshire and Northamptonshire.	Iron Ore and Ironstone Mines	Other Mines	1934	*1933*	Coal Mines *	Stratified Ironstone Mines of Cleveland, Lincolnshire and Northamptonshire.	Iron Ore and Ironstone Mines	Other Mines	1934	*1933*
Explosions of Firedamp or Coal-dust	**11**	—	—	—	**11**	*8*	**296**	—	—	—	**296**	*35*
FALLS OF GROUND.												
At the working face	319	6	1	5	**331**	*322*	327	6	1	5	**339**	*334*
On roads while repairing or enlarging	47	—	1	—	**48**	*69*	48	—	1	—	**49**	*71*
On roads while otherwise working or passing	58	1	—	—	**59**	*48*	60	1	—	—	**61**	*51*
In shafts	—	—	—	—	—	—	—	—	—	—	—	—
Total	**424**	**7**	**2**	**5**	**438**	*439*	**435**	**7**	**2**	**5**	**449**	*456*
SHAFT ACCIDENTS.												
Overwinding	2	—	—	—	**2**	—	3	—	—	—	**3**	—
Ropes or chains breaking	—	—	—	—	—	*1*	—	—	—	—	—	*1*
Whilst descending or ascending by machinery	1	—	—	—	**1**	*3*	1	—	—	—	**1**	*3*
Falling into shaft from surface	—	—	—	—	—	*1*	—	—	—	—	—	*1*
Falling from part way down	4	—	—	—	**4**	*16*	4	—	—	—	**4**	*16*
Things falling into shaft from surface	—	—	—	—	—	*1*	—	—	—	—	—	*1*
Things falling from part way down	1	—	—	—	**1**	—	1	—	—	—	**1**	—
Other shaft accidents	7	—	—	—	**7**	*6*	7	—	—	—	**7**	*6*
Total	**15**	—	—	—	**15**	*28*	**16**	—	—	—	**16**	*28*
UNDERGROUND HAULAGE ACCIDENTS.												
Ropes or chains breaking	6	—	—	—	**6**	*13*	6	—	—	—	**6**	*14*
Run over or crushed by trams or tubs‡:												
Mechanical haulage	55	—	—	2	**57**	*67*	55	—	—	2	**57**	*63*
Horse haulage	32	—	—	—	**32**	*25*	32	—	—	—	**32**	*25*
Hand haulage	7	—	—	—	**7**	*8*	7	—	—	—	**7**	*8*
Runaway trams or tubs	42	—	—	—	**42**	*32*	43	—	—	—	**43**	*33*
Total	*136*	—	—	*2*	*138*	*132*	*137*	—	—	*2*	*9*	*134*
Other haulage accidents	12	—	1	—	**13**	*11*	13	—	1	—	**14**	*11*
Total	**154**	—	**1**	**2**	**157**	*156*	**156**	—	**1**	**2**	**159**	*159*
MISCELLANEOUS UNDERGROUND												
By explosives	11	—	—	—	**11**	*18*	11	—	—	—	**11**	*21*
Suffocation by natural gases	4	—	—	—	**4**	*5*	5	—	—	—	**5**	*5*
By underground fires	3	—	—	—	**3**	—	6	—	—	—	**6**	—
Irruptions of water	1	—	—	—	**1**	*1*	1	—	—	—	**1**	*2*
Electricity	8	—	—	—	**8**	*14*	8	—	—	—	**8**	*14*
By machinery	17	—	—	—	**17**	6	17	—	—	—	**17**	*6*
Other accidents	41	—	1	4	**46**	*39*	41	—	1	4	**46**	*39*
Total	**85**	—	**1**	**4**	**90**	*83*	**89**	—	**1**	**4**	**94**	*87*
Total Underground	**689**	**7**	**4**	**11**	**711**	*714*	**992**	**7**	**4**	**11**	**1,014**	*765*
ON SURFACE.												
By machinery	18	—	—	—	**18**	*15*	18	—	—	—	**18**	*15*
Boiler explosions	1	—	—	—	**1**	*1*	1	—	—	—	**1**	*1*
On railways, sidings or tramways:												
While engaged in moving wagons	13	—	—	—	**13**	*12*	13	—	—	—	**13**	*12*
While engaged in coupling or uncoupling wagons	3	—	—	—	**3**	*1*	3	—	—	—	**3**	*1*
Run over while passing along or across railways or tramways	7	—	—	—	**7**	*6*	7	—	—	—	**7**	*6*
Crushed between wagons & structures	6	—	—	—	**6**	—	6	—	—	—	**6**	—
In other ways	5	—	—	—	**5**	*10*	5	—	—	—	**5**	*10*
Total	*34*	—	—	—	*34*	*29*	34	—	—	—	*34*	*29*
Electricity	2	—	—	—	**2**	*1*	2	—	—	—	**2**	*1*
Other accidents	19	—	—	1	**20**	*20*	19	—	—	1	**20**	*20*
Total on Surface	**74**	—	—	**1**	**75**	*66*	**74**	—	—	**1**	**75**	*66*
Grand Total	**763**	**7**	**4**	**12**	**786**	—	**1,066**	**7**	**4**	**12**	**1,089**	—
Total in 1933	*767*	*5*	*4*	*4*	—	*780*	*815*	*5*	*7*	*4*	—	*831*

* Including Shale and Fireclay Mines.

† The following classes of accidents, which are reported at the time of their occurrence to H.M. Divisional Inspectors personal injury; (*b*) Accidents caused by explosion of gas or dust, or any explosive, or by electricity, or by overof more than three days and are included in the preceding column.

‡ Not including accidents primarily due to ropes or chains breaking.

Mines in Great Britain, and Number of Persons Killed and Injured the Year 1934.

(ii). NON-FATAL ACCIDENTS DISABLING THE PERSONS INJURED FOR MORE THAN THREE DAYS

Number of Separate Accidents at Mines under the						Number of Persons Injured at Mines under the						Number of Persons seriously Injured† in 1934 at Mines under the	
Coal Mines Act.		Metalliferous Mines Regulation Acts.		All Mines.		Coal Mines Act.		Metalliferous Mines Regulation Acts.		All Mines.			
Coal Mines *	Stratified Ironstone Mines of Cleveland, Lincolnshire and Northamptonshire.	Iron Ore and Ironstone Mines	Other Mines	1934.	*1933.*	Coal Mines. *	Stratified Ironstone Mines of Cleveland Lincolnshire and Northamptonshire.	Iron Ore and Ironstone Mines	Other Mines	1934.	*1933.*	Coal Mines Act.	Metalliferous Mines Regulation Acts.
39	**1**	—	—	**40**	*32*	**92**	**1**	—	—	**93**	*66*	**99**	—
38,941	128	56	115	**39,240**	*36,386*	39,102	129	56	115	**39,402**	*36,451*	1,086	7
4,547	2	—	3	**4,552**	*4,338*	4,574	2	—	3	**4,579**	*4,351*	143	1
3,445	1	—	13	**3,459**	*3,333*	3,473	1	—	13	**3,487**	*3,347*	147	—
5	—	—	—	**5**	*7*	5	—	—	—	**5**	*7*	—	—
46,938	**131**	**56**	**131**	**47,256**	*44,064*	**47,154**	**132**	**56**	**131**	**47,473**	*44,156*	**1,376**	**8**
15	—	—	—	**15**	*3*	84	—	—	—	**84**	*25*	91	—
1	—	—	—	**1**	*1*	1	—	—	—	**1**	*1*	—	1
9	—	1	—	**10**	*11*	10	—	1	—	**11**	*12*	4	—
6	—	—	3	**9**	*6*	6	—	—	3	**9**	*6*	—	—
												1	—
												2	—
39	2	1	1	**43**	*43*	40	2	1	2	**45**	*44*	4	—
102	1	1	6	**110**	*84*	103	1	1	6	**111**	*85*	9	—
172	**3**	**3**	**10**	**188**	*148*	**244**	**3**	**3**	**11**	**261**	*173*	**111**	**1**
91	1	—	1	**93**	*93*	93	1	—	1	**95**	*102*	22	—
5,454	4					5,465	4					223	1
5,880	35					5,882	35					124	—
7,041	6	20	25	**18,856**	*17,971*	7,041	6	20	25	**18,882**	*17,995*	136	2
391	—					404	—					104	—
18,766	*45*	*20*	*25*	*18,856*	*17,971*	*18,792*	*45*	*20*	*25*	*18,882*	*17,995*	*587*	*3*
14,739	26	34	68	**14,867**	*14,197*	14,776	26	34	68	**14,904**	*14,215*	121	1
33,596	**72**	**54**	**94**	**33,816**	*32,261*	**33,661**	**72**	**54**	**94**	**33,881**	*32,312*	**730**	**4**
150	3	—	6	**159**	*126*	163	3	—	6	**172**	*131*	195	7
5	—	—	—	**5**	*3*	5	—	—	—	**5**	*3*	—	—
3	—	—	—	**3**	*2*	3	—	—	—	**3**	*2*	—	—
3	—	—	—	**3**	*1*	3	—	—	—	**3**	*20*	—	—
32	—	—	—	**32**	*21*	36	—	—	—	**36**	*22*	50	—
2,929	1	2	25	**2,957**	*2,245*	2,933	1	2	25	**2,961**	*2,252*	85	2
37,893	179	71	295	**38,438**	*34,266*	37,907	179	71	295	**38,452**	*34,270*	272	13
41,015	**183**	**73**	**326**	**41,597**	*36,664*	**41,050**	**183**	**73**	**326**	**41,632**	*36,700*	**602**	**22**
121,760	**390**	**186**	**561**	**122,897**	*113,169*	**122,201**	**391**	**186**	**562**	**123,340**	*113,407*	**2,918**	**35**
647	—	2	17	**666**	*621*	649	—	2	17	**668**	*621*	47	1
4	—	—	—	**4**	*3*	6	—	—	—	**6**	*3*	1	—
1,413	5					1,413	5					51	—
235	3					235	3					2	—
111	1	5	39	**3,196**	*3,132*	111	1	5	39	**3,197**	*3,134*	8	—
352	3					352	3					8	1
1,025	4					1,026	4					33	2
3,136	*16*	*5*	*39*	*3,196*	*3,132*	*3,137*	*16*	*5*	*39*	*3,197*	*3,134*	*102*	*3*
11	—	—	1	**12**	*7*	11	—	—	1	**12**	*8*	13	2
6,424	12	26	177	**6,639**	*5,913*	6,436	12	26	177	**6,651**	*5,923*	135	6
10,222	**28**	**33**	**234**	**10,517**	*9,676*	**10,239**	**28**	**33**	**234**	**10,534**	*9,689*	**298**	**12**
131,982	**418**	**219**	**795**	**133,414**	—	**132,440**	**419**	**219**	**796**	**133,874**	—	**3,216**	**47**
121,888	*283*	*131*	*543*	—	*122,845*	*122,136*	*283*	*132*	*545*	—	*123,096*	*2,924*	*31*

of Mines are included, viz., (*a*) Accidents causing fracture of head or limb, or dislocation of limb, or any other serious winding, and causing any personal injury whatever. The majority of these accidents involve a period of disablement

TABLE 46.—*Number of Deaths from Accidents and Death-rates in and about Mines in Great Britain* from* 1873, *classified according to the Cause of Accident.*

A.—MINES UNDER THE COAL MINES ACT.

Decennial Period or Year.	Under-ground. By Explosions of Firedamp or Coal-dust.	Under-ground. By Falls of Ground.	Under-ground. Shaft Accidents.	Under-ground. Haulage Accidents.	Under-ground. Miscellaneous Accidents.	Under-ground. From all Causes.	On Surface. From all Causes.	Total.
(a) Number of Deaths.								
Annual Average. 1873–1882	263	453	130	128	63	1,037	92	**1,129**
Annual Average. 1883–1892	147	460	88	151	80	926	106	**1,032**
Annual Average. 1893–1902	104	448	79	168	96	895	120	**1,015**
Annual Average. 1903–1912	133	573	81	235	108	1,130	145	**1,275**
Annual Average. 1913–1922	88	607	53	249	116	1,113	130	**1,243**
Annual Average. 1923–1932	52	536	42	239	115	984	95	**1,079**
1927	72	565	53	232	111	1,033	95	**1,128**
1928	36	496	28	231	100	891	98	**989**
1929	34	581	41	220	120	996	80	**1,076**
1930	70	515	33	241	81	940	73	**1,013**
1931	107	418	20	174	71	790	69	**859**
1932	69	444	39	174	82	808	73	**881**
1933	35	454	28	158	79	754	66	**820**
1934	296	442	16	156	89	999	74	**1,073**
(b) Death-rate per 1,000 Persons Employed.‡								
Annual Average. 1873–1882	·65	1·12	·32	·32	·16	2·57	·92	**2·24**
Annual Average. 1883–1892	·32	1·00	·19	·33	·17	2·01	·96	**1·81**
Annual Average. 1893–1902	·18	·76	·13	·29	·16	1·52	·83	**1·39**
Annual Average. 1903–1912	·17	·74	·11	·30	·14	1·46	·78	**1·33**
Annual Average. 1913–1922	·10	·71	·06	·29	·14	1·30	·59	**1·15**
Annual Average. 1923–1932	·06	·66	·05	·29	·14	1·20	·45	**1·05**
1927	·09	·69	·06	·28	·13	1·25	·45	**1·09**
1928	·05	·66	·04	·30	·13	1·18	·50	**1·04**
1929	·04	·75	·05	·29	·16	1·29	·41	**1·11**
1930	·09	·69	·04	·32	·11	1·25	·37	**1·07**
1931	·16	·60	·03	·25	·10	1·14	·38	**·98**
1932	·11	·68	·06	·27	·12	1·24	·42	**1·06**
1933	·06	·72	·05	·25	·13	1·21	·38	**1·03**
1934	·47	·71	·03	·25	·14	1·60	·43	**1·35**

B.—MINES UNDER THE METALLIFEROUS MINES REGULATION ACTS.

Under-ground. By Explosions of Firedamp.	Under-ground. By Falls of Ground.	Under-ground. Shaft Accidents.	Under-ground. Haulage Accidents.	Under-ground. Miscellaneous Accidents.	Under-ground. From all Causes.	On Surface. From all Causes.	Total.	Decennial Period or Year.
(a) Number of Deaths.								
—	31	24	1	22	78	13	**91**	Annual Average. 1873–1882
†	24	13	1	16	54	7	**61**	Annual Average. 1883–1892
—	16	9	1	13	39	5	**44**	Annual Average. 1893–1902
—	16	7	1	8	32	6	**38**	Annual Average. 1903–1912
—	10	5	1	6	22	4	**26**	Annual Average. 1913–1922
1	6	2	1	4	14	2	**16**	Annual Average. 1923–1932
—	7	2	—	4	13	—	**13**	1927
—	12	3	1	6	22	3	**25**	1928
—	3	1	1	10	15	4	**19**	1929
—	6	1	—	3	10	2	**12**	1930
—	5	—	2	2	9	1	**10**	1931
8	2	1	—	—	11	1	**12**	1932
—	2	—	1	8	11	—	**11**	1933
—	7	—	3	5	15	1	**16**	1934
(b) Death-rate per 1,000 Persons Employed.‡								
—	·94	·72	·03	·66	2·35	·58	**1·62**	Annual Average. 1873–1882
·02	·94	·52	·04	·63	2·15	·39	**1·44**	Annual Average. 1883–1892
—	·83	·44	·03	·66	1·96	·38	**1·31**	Annual Average. 1893–1902
—	·93	·41	·06	·47	1·87	·47	**1·30**	Annual Average. 1903–1912
—	·79	·44	·08	·51	1·82	·44	**1·25**	Annual Average. 1913–1923
·10	·76	·26	·06	·54	1·72	·28	**1·10**	Annual Average. 1923–1932
—	·77	·22	—	·44	1·43	—	**·82**	1927
—	1·35	·34	·11	·68	2·48	·44	**1·60**	1928
—	·33	·11	·11	1·10	1·65	·60	**1·21**	1929
—	·78	·13	—	·39	1·30	·35	**·89**	1930
—	·92	—	·37	·37	1·66	·23	**1·02**	1931
1·54	·39	·19	—	—	2·12	·24	**1·29**	1932
—	·36	—	·18	1·46	2·00	—	**1·12**	1933
—	1·06	—	·46	·76	2·28	·19	**1·36**	1934

DEATH-RATES FROM ACCIDENTS UNDER AND ABOVE-GROUND PER 1,000,000 TONS OF MINERAL RAISED.

Annual Average.		Year.		Year.	
1873–1882	7·42	1927	4·36	1931	3·82
1883–1892	5·65	1928	4·04	1932	4·13
1893–1902	4·70	1929	4·05	1933	3·87
1903–1912	4·76	1930	4·04	1934	4·74
1913–1922	4·92				
1923–1932	4·26				

* Prior to 1922 figures for Ireland are included.

† There were five persons killed in 1887 and one in 1888 by explosions of firedamp.

‡ The death-rates for underground accidents are based upon the number of persons so employed, and those for surface accidents upon the number of persons employed above-ground.

Note.—For comparable particulars of the output of mineral and the number of persons employed, *see* Tables 4 and 12.

TABLE 47.—*Number of Persons Killed and Injured by Accidents at Mines in Great Britain per* 100,000 *Man-shifts worked from* 1922.

Year.	Mines under the Coal Mines Act (except Stratified ironstone mines in Cleveland, Lincolnshire and Northamptonshire).												Iron Mines.*		Other Mines.*
	Persons Employed Below and Above Ground.			Under-Ground.*						Surface.*	Under-Ground and Surface.		Cleveland, Lincoln & Northants.	Elsewhere.	
				Persons Killed and Injured by—											
	Killed.	Seriously Injured.	Total Injured.	Explosions of Firedamp or Coal Dust.	Falls of Ground.	Shaft Accidents.	Haulage Accidents.	Other Causes.	*All Causes Under-Ground.*	Accidents on Railways, &c.	Other Causes.	All Causes.			
	Rate per 100,000 man-shifts worked.														
Annual Averages 1922–26 ..	0·40	1·61	65·1	0·1	28·5	0·4	21·0	27·2	*77·2*	6·9	17·8	*65·5*	62·5	42·9	31·6
Annual Averages 1927–31 ..	0·43	1·71	69·3	0·1	31·6	0·3	22·5	29·4	*83·9*	6·7	15·5	*69·7*	69·5	35·3	33·8
1922	0·39	1·68	65·9	0·1	29·1	0·4	21·5	27·1	*78·2*	6·8	17·8	*66·3*	50·0	38·4	21·9
1923	0·41	1·64	66·9	0·1	28·6	0·4	22·2	27·9	*79·2*	6·7	18·8	*67·3*	62·6	46·7	28·8
1924	0·38	1·53	62·5	0·1	27·1	0·5	20·4	25·9	*74·0*	6·9	17·2	*62·9*	67·4	47·2	35·8
1925	0·40	1·54	63·4	0·1	27·9	0·5	20·2	26·8	*75·5*	6·6	17·0	*63·9*	65·9	40·8	34·9
1926†	0·42	1·67	66·9	0·0	29·6	0·5	20·8	28·3	*79·2*	7·3	18·2	*67·3*	63·0	37·4	33·2
1927	0·45	1·85	68·5	0·1	30·7	0·5	21·0	30·0	*82·3*	6·9	16·4	*68·9*	70·4	39·6	33·8
1928	0·42	1·77	69·0	0·1	31·3	0·3	23·2	28·5	*83·4*	6·6	15·7	*69·4*	70·4	35·1	35·6
1929	0·43	1·70	70·9	0·1	32·7	0·2	21·9	30·9	*85·8*	6·6	16·0	*71·4*	71·4	37·6	37·6
1930	0·43	1·62	70·8	0·1	32·6	0·2	23·0	30·4	*86·3*	6·4	15·5	*71·2*	70·0	33·8	31·0
1931	0·41	1·57	66·9	0·1	30·7	0·2	23·7	27·1	*81·8*	7·1	13·8	*67·3*	62·5	26·2	28·3
1932	0·45	1·63	63·7	0·1	30·2	0·2	23·2	24·5	*78·2*	6·6	13·3	*64·1*	61·7	26·6	27·6
1933	0·43	1·52	63·7	0·1	30·7	0·1	22·4	25·1	*78·4*	6·6	13·6	*64·1*	57·5	26·2	26·1
1934	0·53	1·60	66·1	0·3	31·4	0·2	22·3	27·2	*81·4*	6·5	14·5	*66·6*	57·8	34·4	30·9

* The rates for underground and surface accidents are based upon the number of man-shifts worked below and above-ground, respectively. The estimated number of shifts worked in 1934 was 151,262,000 below-ground and 49,074,000 above-ground at mines under the Coal Mines Act (as defined above); 737,000 at stratified ironstone mines; 648,000 at other iron mines; and 2,616,000 at mines other than coal and iron mines. The actual number of persons killed and injured in 1934 (including those disabled for more than 3 days) are shown in Table 45.

† January to April in respect of mines under the Coal Mines Act.

Note.—The maximum hours of labour below-ground at coal mines in 1922 were 7 hours per day which were increased to 8 hours in July, 1926. In certain districts the increased hours were limited by agreement to 7½, and since 1st December, 1930, this has been the statutory limit. In the case of surface workers engaged in the manipulation of coal the hours of presence in 1922–6 were 46½ in a full week, but have since been subject to modifications similar to those of workers below-ground.

TABLE 48.—*Principal Colliery Disasters* from All Causes from* 1901.

Year.	Date.	Name of Colliery.	County.	Nature of Disaster.	No. of Persons Killed.
1901	May 24	Universal	Glamorgan	Explosion	81
1902	Sept. 3	McLaren, No. 1 Pit	Monmouth	Explosion	16
1905	Jan. 21	Elba	Glamorgan	Explosion	11
	Mar. 10	Cambrian	Glamorgan	Explosion	33
	July 11	National	Glamorgan	Explosion	119
1906	Oct. 10	Wingate Grange	Durham	Explosion	25
1907	Oct. 4	Foggs	Lancashire	Shaft accident	10
1908	Feb. 20	Washington "Glebe"	Durham	Explosion	14
	Mar. 4	Hamstead	Stafford	Underground fire	25
	April 9	Norton Hill	Somerset	Explosion	10
	Aug. 18	Maypole	Lancashire	Explosion	75
1909	Feb. 16	West Stanley	Durham	Explosion	168
	Oct. 29	Darran	Glamorgan	Explosion	27†
	Dec. 10	Caprington, No. 41	Ayr	Irruption of water	10
1910	May 11	Whitehaven, Wellington Pit	Cumberland	Explosion	136
	Dec. 21	Hulton No. 3 Bank Pit	Lancashire	Explosion	344
1912	July 9	Cadeby Main	Yorkshire	Explosion	88‡
1913	Feb. 7	Rufford	Nottingham	Shaft accident	14
	Aug. 3	Cadder, No. 15 Pit	Lanark	Underground fire	22
	Oct. 14	Senghenydd	Glamorgan	Explosion	439§
1914	May 30	Wharncliffe Silkstone	Yorkshire	Explosion	12
1915	Feb. 25	New Hem Heath	Stafford	Underground fire	12
	June 30	Bentinck	Nottingham	Shaft accident	10
	Sept. 21	Exhall	Warwick	Smoke and fumes descending shft.	14
1916	Aug. 13	Woodhorn	Northumberland	Explosion	13
1918	Jan. 12	Podmore Hall, Minnie Pit	Stafford	Explosion	155
	July 9	Stanrigg and Arbuckle	Lanark	Inrush of moss and water.	19
1922	July 13	Plean	Stirling	Explosion	12
	Sept. 5	Whitehaven, Haig Pit	Cumberland	Explosion	39
1923	April 26	Caldean	Carmarthen	Runaway trams	10
	July 28	Maltby Main	Yorkshire	Explosion	27
	Sept. 25	Redding, No. 23	Stirling	Inrush of water	40
1925	Mar. 30	Montagu Main	Northumberland	Inrush of water	38
1927	Mar. 1	Marine No. 1	Monmouth	Explosion	52
	Mar. 1	Bilsthorpe	Nottingham	Shaft accident	14
1928	Feb. 12	Whitehaven, Haig Pit	Cumberland	Explosion	13
1930	Feb. 26	Lyme	Lancashire	Explosion	13
	Oct. 1	Grove	Stafford	Explosion	14
1931	Jan. 29	Whitehaven, Haig Pit	Cumberland	Explosion	27
	Oct. 31	Bowhill	Fifeshire	Explosion	10
	Nov. 20	Bentley	Yorkshire	Explosion	45
1932	Jan. 25	Llwynypia, No. 1	Glamorgan	Explosion	11
	Oct. 10	Bickershaw, No. 3	Lancashire	Shaft accident	19
	Nov. 12	Garswood Hall No. 9	Lancashire	Explosion	27
	Nov. 16	Cardowan	Lanarkshire	Explosion	11
1933	Nov. 19	Grassmoor No. 8 Pit	Derbyshire	Explosion	14
1934	Sept. 22	Gresford	Denbighshire	Explosion	265‖

* Accidents involving the loss of 10 lives or more.

† Including five persons killed during rescue operations.

‡ There were two explosions on the same day. As a result of the first 35 persons were killed, the second explosion causing the loss of 53 members of the rescue parties.

§ In addition, one other man lost his life on the following day while working at a fall of stone.

‖ Including three persons killed during rescue operations and one person killed when the sealing blew off the downcast shaft three days later.

TABLE 49.—*Summary of Principal Colliery Disasters* and of all Accidents caused by Explosions of Firedamp or Coal-dust for Decennial Periods from* 1851.

Note.—Particulars of these accidents from 1851 to 1900 will be found in Appendix IV of Part II of the Report of H.M. Chief Inspector of Mines for the year 1900, and for subsequent years in Table 48 opposite.

District.	1851–1860.	1861–1870.	1871–1880.	1881–1890.	1891–1900.	1901–1910.	1911–1920.	1921–1930.	1931–1934 (4 years).	From 1851 to 1934.
	(i) Number of Separate Accidents.									
Northumberland	2	2	—	—	—	—	1	—	—	5
Durham	2	1	2	5	1	3	—	—	—	14
Yorkshire	4	2	4	2	2	—	2	1	1	18
Lancashire and Cheshire	10	11	9	5	—	2	—	1	1	39
North Wales	—	3	—	1	—	—	—	—	1	5
Derbyshire, Nottingham and Leicester	—	—	1	1	—	—	—	—	1	3
Staffordshire, Salop, Worcester and Warwick	2	3	5	3	1	—	1	1		16
South Wales and Monmouth	10	10	11	6	4	6	1	1		50
Other English Districts:—										
Cumberland	—	—	—	1	—	1	—	2	1	5
Somersetshire	—	1	—	1	1	1	—	—	—	4
Scotland	1	—	3	1	1	—	—	1	2	9
All Districts — **Disasters***	**31**	**33**	**35**	**26**	**10**	**13**	**5**	**7**	**8**	**168**
All Districts — **All Accidents**	**820**	**565**	**424**	**245**	**189**	**182**	**135**	**133**	**45**	**2,741**
	(ii) Number of Deaths.									
Northumberland	98	42	—	—	—	—	13	—	—	153
Durham	57	24	190	194	20	207	—	—	—	692
Yorkshire	264	420	221	42	202	—	100	27	45	1,321
Lancashire and Cheshire	359	338	462	355	—	419	—	13	27	1,973
North Wales	—	33	—	20	—	—	—	—	265	318
Derbyshire, Nottingham and Leicester	—	—	26	45	—	—	—	—	14	85
Staffordshire, Salop, Worcester and Warwick	22	122	163	112	10	—	155	14	—	598
South Wales and Monmouth	410	454	700	411	478	287	439	52	11	3,242
Other English Districts:—										
Cumberland	—	—	—	30	—	136	—	52	27	245
Somersetshire	—	11	—	10	10	10	—	—	—	41
Scotland	61	—	252	73	13	—	—	12	21	432
All Districts — **Disasters***	**1,271**	**1,444**	**2,014**	**1,292**	**733**	**1,059**	**707**	**170**	**410**	**9,100**
All Districts — **All Accidents**	**2,441**	**2,267**	**2,686**	**1,661**	**1,024**	**1,357**	**944**	**433**	**515**	**13,328**

* Accidents involving the loss of 10 lives or more.

TABLE 50.—*Number of Separate Fatal and Non-fatal Accidents at Quarries in Great Britain under the Quarries Act, 1894, and Number of Persons Killed and Injured thereby during the Year 1934.*

Place or Cause of Accident.	Fatal Accidents.				Non-fatal Accidents (disabling the person injured for more than 3 days).			
	1934.		*1933.*		1934.		*1933.*	
	Number of Separate Accidents.	Number of Persons Killed.	*Number of Separate Accidents.*	*Number of Persons Killed.*	Number of Separate Accidents.	Number of Persons Injured.*	*Number of Separate Accidents.*	*Number of Persons Injured.**
INSIDE THE QUARRIES. (*i.e.*, inside the actual pits, holes, or excavations.)								
Falls of Ground.								
From beyond the person's own working-place	8	8	*5*	*5*	572	575	*490*	*495*
From the person's own working-place	16	16	*14*	*14*				
Total	**24**	**24**	*19*	*19*	**572**	**575**	*490*	*495*
By Blasting.								
While charging or tamping	2	2	*1*	*1*				
From stones projected by shots, when persons had not taken sufficient shelter	2	2	*3*	*3*	46	53	*47*	*48*
From miss-fire shots	1	1	*1*	*1*				
Other accidents	1	1	*1*	*1*				
Total	**6**	**6**	*6*	*6*	**46**	**53**	*47*	*48*
During Descent or Ascent.								
Falling from paths, steps or ladders	—	—	—	—	38	38	*42*	*42*
When descending or ascending by machinery	1	1	—	—	2	2	—	—
Other accidents	—	—	—	—	24	24	*16*	*16*
Total	**1**	**1**	—	—	**64**	**64**	*58*	*58*
Miscellaneous.								
Ropes or chains breaking	—	—	—	—	5	5	*5*	*6*
Machinery	1	1	*1*	*1*	79	79	*89*	*90*
Boiler explosions	—	—	—	—	—	—	*2*	*2*
On inclined and engine planes	2	2	*1*	*1*	32	32	*36*	*36*
On railways, sidings or tramways	4	4	*1*	*1*	623	624	*565*	*565*
Falling from ledges	6	6	*3*	*3*	61	61	*63*	*64*
Electricity	—	—	—	—	—	—	*1*	*1*
Other accidents	7	7	*7*	*7*	2,441	2,441	*2,055*	*2,055*
Total	**20**	**20**	*13*	*13*	**3,241**	**3,242**	*2,816*	*2,819*
Total Inside Quarries	**51**	**51**	*38*	*38*	**3,923**	**3,934**	*3,411*	*3,420*
OUTSIDE THE QUARRIES.								
Machinery	5	5	*3*	*3*	108	108	*98*	*98*
Boiler explosions	—	—	—	—	1	1	—	—
On inclined and engine planes	—	—	—	—	21	21	*6*	*6*
On railways, sidings or tramways	3	3	*1*	*2*	257	257	*233*	*233*
Electricity	—	—	—	—	1	1	*4*	*4*
Other accidents	4	5	*3*	*3*	1,017	1,017	*813*	*814*
Total Outside Quarries	**12**	**13**	*7*	*8*	**1,405**	**1,405**	*1,154*	*1,155*
Grand Total	**63**	**64**	*45*	*46*	**5,328**	**5,339**	*4,565*	*4,575*

* For particulars of the number of Persons injured by serious accidents *see* Table 52, Section III.

TABLE 51.—*Number of Deaths from Accidents and Death-rates per* 1,000 *persons employed at Quarries under the Quarries Act,* 1894, *in Great Britain* from* 1895, *classified according to the Cause of Accident.*

Decennial Period or Year.	Inside the Quarries.					Outside the Quarries.	Total.
	By Falls of Ground.	By Blasting.	During Descent or Ascent.	Miscellaneous Accidents.	From all Causes.	From all Causes.	
(a) Number of Deaths.							
Annual Average 1895–1904	44	11	3	37	95	20	115
Annual Average 1905–1914	36	10	1	28	75	15	90
Annual Average 1915–1924	21	8	1	19	49	11	60
Annual Average 1925–1934	25	6	1	19	51	12	63
1920	20	8	—	17	45	9	54
1921	22	3	1	10	36	11	47
1922	16	7	1	15	39	7	46
1923	31	11	2	21	65	14	79
1924	29	6	1	28	64	12	76
1925	22	11	—	29	62	12	74
1926†	24	10	1	22	57	10	67
1927	35	3	1	14	53	15	68
1928	29	4	1	24	58	8	66
1929	30	7	2	13	52	17	69
1930	20	9	—	29	58	12	70
1931	22	3	—	15	40	10	50
1932	23	1	1	16	41	10	51
1933	19	6	—	13	38	8	46
1934	24	6	1	20	51	13	64
(b) Death-rate per 1,000 *Persons Employed.*‡							
Annual Average 1895–1904	·73	·19	·04	·61	1·57	·45	1·09
Annual Average 1905–1914	·66	·19	·01	·53	1·39	·47	1·06
Annual Average 1915–1924	·55	·21	·02	·49	1·27	·48	·98
Annual Average 1925–1934	·51	·13	·02	·40	1·06	·42	·82
1920	·46	·18	—	·39	1·03	·37	·80
1921	·50	·07	·02	·23	·82	·42	·67
1922	·38	·17	·02	·36	·93	·27	·68
1923	·66	·24	·04	·45	1·39	·51	1·06
1924	·58	·12	·02	·56	1·28	·41	·96
1925	·41	·21	—	·55	1·17	·41	·89
1926†	·46	·19	·02	·42	1·09	·34	·82
1927	·67	·06	·02	·27	1·02	·50	·83
1928	·57	·08	·02	·47	1·14	·28	·83
1929	·58	·14	·04	·25	1·01	·58	·85
1930	·42	·19	—	·60	1·21	·42	·91
1931	·48	·06	—	·33	·87	·37	·68
1932	·54	·02	·02	·38	·96	·41	·76
1933	·45	·14	—	·31	·90	·33	·70
1934	·54	·13	·02	·45	1·14	·52	·92

* Prior to 1922, figures for Ireland are included.

† Employment in 1926 at certain quarries was indirectly affected by the dispute in the coal mining industry. The general effect on the quarry industry, however, was only slight, and similarly in the case of the effect upon death-rates from accidents.

‡ The death-rates for accidents inside the quarries are based upon the number of persons so employed, and those for accidents outside the quarries upon the number of persons employed outside.

Note.—For comparable particulars of the output of mineral, and the number of persons employed *see* Table 17.

TABLE 52.—*Total Number of persons Killed and Injured by*

Note.—For the Number of separate Fatal and

I.—Mines under the Coal Mines Act, 1911 (*not including Stratified Ironstone*

Note.—For the estimated Number of Manshifts worked

ENGLAND AND

A. NUMBER OF

Place or Cause of Accident.	1. Northumberland.	2. Durham.	3. Cumberland and Westmorland.	4. Lancashire and Cheshire.	5. Yorkshire, South.	6. Yorkshire, West.	7. Nottinghamshire.	8. Derbyshire, North.	9. Derbyshire, South.	10. Staffordshire, North.	11. Cannock Chase.	12. Staffordshire, South and Worcestershire.
Explosions of Firedamp or Coal Dust	—	3	—	5	3	—	9	—	—	—	—	—
FALLS OF GROUND.												
At the working face	26	47	2	25	25	13	27	23	1	6	6	3
On roads while repairing or enlarging	1	3	3	2	8	4	3	3	—	1	1	—
On roads while otherwise working or passing	1	14	—	6	3	4	6	2	—	1	1	—
In shafts	—	—	—	—	—	—	—	—	—	—	—	—
Total	**28**	**64**	**5**	**33**	**36**	**21**	**36**	**28**	**1**	**8**	**8**	**3**
SHAFT ACCIDENTS.												
Overwinding	—	—	—	—	1	—	—	—	—	—	—	—
Ropes or chains breaking	—	—	—	—	—	—	—	—	—	—	—	—
Whilst descending or ascending by machinery	—	—	—	1	—	—	—	—	—	—	—	—
Falling into shaft from surface ..	—	—	—	—	—	—	—	—	—	—	—	—
Falling from part way down ..	1	1	—	—	—	—	—	—	—	—	—	—
Things falling into shaft from surface	—	—	—	—	—	—	—	—	—	—	—	—
Things falling from part way down	—	1	—	—	—	—	—	—	—	—	—	—
Other shaft accidents	1	—	—	—	—	—	—	—	—	—	—	—
Total	**2**	**2**	—	**1**	**1**	—	—	—	—	—	—	—
UNDERGROUND HAULAGE ACCIDENTS.												
Ropes or chains breaking	—	1	—	—	—	—	—	—	—	1	—	—
Run over or crushed by trams or tubs* :—												
Mechanical haulage	—	4	—	8	10	2	3	1	—	—	1	—
Horse haulage	1	8	1	—	5	—	2	2	—	—	—	1
Hand haulage	—	1	—	—	1	1	—	—	—	—	1	1
Runaway trams or tubs	2	3	—	4	2	1	1	1	—	1	—	—
Total	*3*	*16*	*1*	*12*	*18*	*4*	*6*	*4*	—	*1*	*2*	*2*
Other haulage accidents	—	1	—	1	2	—	—	—	—	—	2	1
Total	**3**	**18**	**1**	**13**	**20**	**4**	**6**	**4**	—	**2**	**4**	**3**
MISCELLANEOUS UNDERGROUND												
By explosives	4	1	—	—	—	—	—	—	—	—	—	—
Suffocation by natural gases ..	—	2	—	—	—	2	—	—	—	—	—	—
By underground fires	1	—	—	—	—	—	—	—	—	—	—	—
Irruptions of water	—	—	—	—	—	—	—	—	—	—	—	—
Electricity	1	1	—	—	—	1	1	—	—	—	—	—
By machinery	1	3	—	—	3	—	1	2	—	1	—	—
Other accidents	4	2	—	5	5	1	5	—	—	—	3	1
Total	**11**	**9**	—	**5**	**8**	**4**	**7**	**2**	—	**1**	**3**	**1**
Total Underground ..	**44**	**96**	**6**	**57**	**68**	**29**	**58**	**34**	**1**	**11**	**15**	**7**
ON SURFACE.												
By machinery	—	2	—	1	3	1	2	2	—	—	—	—
Boiler explosions	—	1	—	—	—	—	—	—	—	—	—	—
On railways, sidings or tramways :												
While engaged in moving waggons	—	1	—	2	1	—	1	2	—	1	—	
While engaged in coupling or uncoupling waggons	—	—	—	—	—	—	—	1	—	—	—	—
Run over while passing along or across railways or tramways	1	1	—	1	—	—	—	—	—	—	—	—
Crushed between waggons and structures	—	1	—	—	—	—	—	—	—	—	1	—
In other ways	—	1	—	—	—	1	—	—	—	—	—	1
Total	*1*	*4*	—	*3*	*1*	*1*	*1*	*3*	—	*1*	*1*	*2*
Electricity	—	1	—	—	—	1	—	—	—	—	—	—
Other accidents	2	3	—	4	2	1	—	—	—	1	—	—
Total on Surface	**3**	**11**	—	**8**	**6**	**4**	**3**	**5**	—	**2**	**1**	**2**
Grand Total	**47**	**107**	**6**	**65**	**74**	**33**	**61**	**39**	**1**	**13**	**16**	**9**
Corresponding figures for the Year 1933	*44*	*84*	*13*	*63*	*93*	*35*	*47*	*58*	*3*	*16*	*16*	*18*

* Not including accidents primarily due to ropes or chains breaking.

Accidents at Mines and Quarries in Great Britain in the Year 1934.

Non-fatal Accidents see Tables 45 and 50.

Mines in Cleveland, Lincolnshire, and Northamptonshire, see Section II.)

in each district in 1934 *see* pp. 182 and 183.

WALES.									SCOTLAND.				GREAT BRITAIN.	
13. Leicestershire.	14. Warwickshire.	15. Shropshire.	16. Forest of Dean.	17. Bristol.	18. Somersetshire.	19. Kent.	20. South Wales and Monmouthshire.	21. North Wales.	22. Fife, Clackmannan, Kinross and Sutherland.	23. Lothians (Mid and East) and Peebles.	24. Lanarkshire, Linlithgow, Stirling, Renfrew and Dumbarton.	25. Ayrshire, Dumfries and Argyll.	1934.	*1933.*
PERSONS KILLED.														
—	—	—	—	—	—	—	—	265	—	1	10	—	296	*35*
5	2	1	—	3	—	4	58	8	13	5	20	4	327	*329*
—	1	1	—	—	—	1	13	—	1	—	1	1	48	*71*
—	—	—	—	—	—	1	14	2	1	1	2	1	60	*50*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	**3**	**2**	—	**3**	—	**6**	**85**	**10**	**15**	**6**	**23**	**6**	**435**	*450*
—	—	—	—	—	—	—	—	—	—	—	2	—	3	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	*1*
—	—	—	—	—	—	—	—	—	—	—	—	—	1	*3*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	*1*
—	—	—	—	—	—	—	1	—	—	1	—	—	4	*16*
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
—	—	1	—	—	—	2	2	—	—	—	1	—	7	*6*
—	—	**1**	—	—	—	**2**	**3**	—	—	**1**	**3**	—	16	*27*
—	—	—	—	—	—	—	2	—	—	—	2	—	6	*14*
—	1	—	—	—	—	1	17	—	3	3	—	1	55	*67*
—	—	—	—	—	—	—	12	—	—	—	—	—	32	*25*
—	1	—	—	—	—	—	1	—	—	—	—	—	7	*8*
—	2	1	—	—	—	2	17	—	2	—	3	1	43	*33*
—	*4*	*1*	—	—	—	*3*	*47*	—	*5*	*3*	*3*	*2*	*137*	*133*
—	—	—	—	—	—	—	4	—	—	1	1	—	13	*11*
—	**4**	**1**	—	—	—	**3**	**53**	—	**5**	**4**	**6**	**2**	156	*158*
—	—	—	—	—	—	1	1	—	2	1	1	—	11	*15*
—	—	—	—	—	—	—	1	—	—	—	—	—	5	*5*
—	2	—	—	—	—	—	—	—	—	—	3	—	6	—
—	—	—	—	—	—	—	—	—	—	—	1	—	1	*2*
—	—	—	—	—	—	—	—	—	1	3	—	—	8	*14*
1	—	—	—	—	—	—	—	—	1	1	2	1	17	*6*
—	—	—	—	—	—	—	8	—	1	—	5	1	41	*37*
1	**2**	—	—	—	—	**1**	**10**	—	**5**	**5**	**12**	**2**	89	*79*
6	**9**	**4**	—	**3**	—	**12**	**151**	**275**	**25**	**17**	**54**	**10**	992	*749*
—	—	—	—	—	—	—	3	—	1	1	2	—	18	*15*
—	—	—	—	—	—	—	—	—	—	—	—	—	1	*1*
—	—	—	—	—	—	—	2	—	—	—	2	—	13	*12*
—	—	—	—	—	—	—	—	—	—	1	—	1	3	*1*
—	1	—	—	—	—	—	1	—	—	1	1	—	7	*6*
—	—	—	—	—	—	—	2	—	2	—	—	—	6	—
—	—	—	—	—	—	—	1	1	—	—	—	—	5	*10*
—	*1*	—	—	—	—	—	*6*	*1*	*2*	*2*	*3*	*1*	*34*	*29*
—	—	—	—	—	—	—	—	—	—	—	—	—	2	*1*
—	1	—	—	—	—	—	3	1	1	—	—	—	19	*20*
—	**2**	—	—	—	—	—	**12**	**2**	**4**	**3**	**5**	**1**	74	*66*
	11	**4**	—	**3**	—	**12**	**163**	**277**	**29**	**20**	**59**	**11**	1,066	—
5	*7*	*1*	*1*	—	*2*	*7*	*176*	*11*	*29*	*18*	*57*	*11*	—	*815*

TABLE 52—

Place or Cause of Accident.	ENGLAND AND											
	1. Northumberland.	2. Durham.	3. Cumberland and Westmorland.	4. Lancashire and Cheshire.	5. Yorkshire, South.	6. Yorkshire, West.	7. Nottinghamshire.	8. Derbyshire, North.	9. Derbyshire, South.	10. Staffordshire, North.	11. Cannock Chase.	12. Staffordshire, South and Worcestershire.
	B. NUMBER OF PERSONS											
Explosions of Firedamp or Coal Dust	2	6	1	2	6	4	31	—	—	—	—	—
FALLS OF GROUND.												
At the working face	2,213	4,369	376	2,597	4,815	1,665	3,026	2,473	164	1,149	685	172
On roads while repairing or enlarging	75	326	5	317	710	280	298	176	17	120	119	17
On roads while otherwise working or passing	125	521	21	306	499	166	208	180	17	32	69	9
In shafts	—	—	—	1	—	—	—	—	—	—	—	—
Total	2,413	5,216	402	3,221	6,024	2,111	3,532	2,829	198	1,301	873	198
SHAFT ACCIDENTS.												
Overwinding	2	48	—	5	5	—	6	3	—	—	—	—
Ropes or chains breaking	—	—	—	1	—	—	—	—	—	—	—	—
Whilst descending or ascending by machinery	—	—	2	2	—	1	—	—	—	—	—	—
Falling down shaft	2	2	—	1	—	—	—	—	—	—	—	—
Things falling down shaft	—	1	—	4	2	—	2	4	1	—	1	1
Other shaft accidents	8	13	1	6	10	7	2	3	1	4	4	2
Total	12	64	3	19	17	8	10	10	2	4	5	3
UNDERGROUND HAULAGE ACCIDENTS.												
Ropes or chains breaking	9	13	2	17	13	2	4	4	—	1	—	—
Run over or crushed by trams or tubs :—†												
Mechanical haulage	443	963	79	379	845	238	345	438	10	164	83	21
Horse haulage	707	2,706	32	31	204	239	144	194	24	1	114	73
Hand haulage	270	840	184	715	1,319	480	430	476	11	131	123	16
Runaway trams or tubs	17	26	11	51	59	17	14	18	—	14	11	5
Total	*1,437*	*4,535*	*306*	*1,176*	*2,427*	*974*	*933*	*1,126*	*45*	*310*	*331*	*115*
Other haulage accidents	694	2,278	227	1,264	2,174	872	673	686	36	349	326	91
Total	2,140	6,826	535	2,457	4,614	1,848	1,610	1,816	81	660	657	206
MISCELLANEOUS UNDERGROUND.												
By explosives	26	29	2	7	4	2	4	3	1	3	3	2
Suffocation by natural gases	—	—	—	—	—	—	4	—	—	—	—	—
By underground fires	—	—	—	1	—	—	—	—	—	—	—	—
Irruptions of water	—	—	—	—	—	—	—	—	—	—	—	—
Electricity	4	8	—	—	3	—	6	1	—	—	1	1
By machinery	172	236	11	232	473	152	155	118	12	118	88	8
Other accidents	2,033	3,730	382	3,053	4,883	1,305	2,836	2,396	89	1,243	802	221
Total	2,235	4,003	395	3,293	5,363	1,459	3,005	2,518	102	1,364	894	232
Total Underground	6,802	16,115	1,336	8,992	16,024	5,430	8,188	7,173	383	3,329	2,429	639
ON SURFACE.												
By machinery	41	90	3	55	115	40	29	33	1	16	7	5
Boiler explosions	—	2	—	—	2	—	1	—	—	—	—	—
On railways, sidings or tramways :												
While engaged in moving waggons	112	227	24	112	115	51	62	82	5	24	25	8
While engaged in coupling or uncoupling waggons	29	48	4	14	37	10	3	7	1	3	6	2
Run over while passing along or across railways or tramways	19	18	1	3	6	7	6	3	—	3	7	—
Crushed between waggons and structures	43	75	1	21	41	17	9	8	—	8	6	3
In other ways	77	88	10	87	112	62	45	47	8	33	26	14
Total	*280*	*456*	*40*	*237*	*311*	*147*	*125*	*147*	*14*	*71*	*70*	*27*
Electricity	—	2	—	—	2	—	—	1	—	—	—	—
Other accidents	453	841	71	572	713	317	353	374	34	154	124	47
Total on Surface	774	1,391	114	864	1,143	504	508	555	49	241	201	79
Grand Total	7,576	17,506	1,450	9,856	17,167	5,934	8,696	7,728	432	3,570	2,630	718
Corresponding figures for the Year 1933	*6,807*	*15,448*	*1,200*	*8,951*	*16,374*	*5,352*	*8,281*	*7,419*	*414*	*3,251*	*2,337*	*631*
Estimated Number of Manshifts worked in 1934 (thousands)	12,238	28,570	1,937	15,312	22,274	9,934	10,311	9,445	709	6,038	5,162	1,484

* *See* Note † to Table 45.
† Not including accidents primarily due to ropes or chains breaking.

continued.

WALES.									SCOTLAND.				GREAT BRITAIN. 1934.		1933.
13. Leicestershire.	14. Warwickshire.	15. Shropshire.	16. Forest of Dean.	17. Bristol.	18. Somersetshire.	19. Kent.	20. South Wales and Monmouthshire.	21. North Wales.	22. Fife, Clackmannan, Kinross and Sutherland.	23. Lothians (Mid. and East) and Peebles.	24. Lanarkshire, Linlithgow, Stirling, Renfrew and Dumbarton.	25. Ayrshire, Dumfries and Argyll.	**Total Number of Persons disabled for more than 3 days.**	Number of Persons seriously Injured. *	*Total Number of Persons disabled for more than 3 days.*
INJURED WHO WERE DISABLED FOR MORE THAN 3 DAYS.															
—	1	—	—	—	—	—	7	—	5	—	26	1	92	98	*64*
267	726	123	116	38	142	625	8,912	581	1,035	585	1,872	376	**39,102**	1,079	*36,268*
67	140	32	9	7	18	81	1,399	89	66	65	121	20	**4,574**	143	*4,348*
27	50	12	3	3	7	58	889	50	42	47	101	31	**3,473**	147	*3,339*
—	—	—	—	—	—	—	2	—	—	1	1	—	**5**	—	*5*
361	**916**	**167**	**128**	**48**	**167**	**764**	**11,202**	**720**	**1,143**	**698**	**2,095**	**427**	**47,154**	**1,369**	*43,960*
—	—	—	—	—	—	—	—	—	2	—	13	—	**84**	91	*25*
—	—	—	—	—	—	—	—	—	—	—	—	—	**1**	—	*1*
—	—	—	—	—	1	—	3	—	—	—	1	—	**10**	4	*10*
—	—	—	—	—	—	—	—	—	—	—	1	—	**6**	1	*5*
1	3	—	—	—	—	—	11	—	1	—	3	5	**40**	6	*43*
—	2	—	—	—	—	—	12	—	9	3	13	3	**103**	9	*73*
1	**5**	—	—	—	**1**	—	**26**	—	**12**	**3**	**31**	**8**	**244**	**111**	*157*
—	—	—	—	—	—	3	10	—	3	1	9	2	**93**	22	*102*
41	117	14	16	4	6	81	579	92	155	52	212	88	**5,465**	222	*5,003*
41	23	44	25	4	9	1	1,163	23	5	7	59	9	**5,882**	124	*5,446*
56	138	25	16	5	38	58	691	122	138	131	496	132	**7,041**	135	*7,068*
4	15	2	1	1	1	14	37	2	10	5	48	21	**404**	104	*428*
142	*293*	*85*	*58*	*14*	*54*	*154*	*2,470*	*239*	*308*	*195*	*815*	*250*	*18,792*	*585*	*17,945*
85	333	83	63	16	39	248	2,562	208	384	226	673	186	**14,776**	121	*14,126*
227	**626**	**168**	**121**	**30**	**93**	**405**	**5,042**	**447**	**695**	**422**	**1,497**	**438**	**33,661**	**728**	*32,173*
—	2	2	—	—	2	—	7	—	10	14	32	8	**163**	191	*126*
—	—	—	—	—	—	1	—	—	—	—	—	—	**5**	—	*3*
1	—	—	—	—	—	—	—	—	1	—	—	—	**3**	—	*2*
—	—	—	—	—	—	—	1	1	—	—	1	—	**3**	—	*20*
—	2	—	—	—	—	—	1	—	2	—	4	3	**36**	50	*22*
43	102	2	3	2	2	61	450	58	120	52	223	40	**2,933**	85	*2,241*
374	1,128	134	214	29	138	446	7,485	571	1,232	685	2,015	483	**37,907**	271	*33,903*
418	**1,234**	**138**	**217**	**31**	**142**	**508**	**7,944**	**630**	**1,365**	**751**	**2,275**	**534**	**41,050**	**597**	*36,317*
1,007	**2,782**	**473**	**466**	**109**	**403**	**1,677**	**24,221**	**1,797**	**3,220**	**1,874**	**5,924**	**1,408**	**122,201**	**2,903**	*112,671*
5	15	1	4	1	2	9	88	14	26	7	32	10	**649**	47	*605*
—	—	—	—	—	—	—	1	—	—	—	—	—	**6**	1	*3*
15	34	1	—	—	7	20	224	25	59	50	99	32	**1,413**	51	*1,335*
1	5	1	—	—	—	4	30	5	2	2	19	2	**235**	2	*261*
—	2	—	1	—	—	—	26	2	1	1	2	3	**111**	8	*104*
1	2	—	3	—	—	—	62	4	10	7	21	10	**352**	8	*343*
11	24	4	5	1	2	4	226	19	40	12	54	15	**1,026**	33	*1,046*
28	*67*	*6*	*9*	*1*	*9*	*28*	*568*	*55*	*112*	*72*	*195*	*62*	*3,137*	*102*	*3,089*
—	—	—	—	—	—	—	3	—	—	—	2	1	**11**	13	*8*
65	236	15	33	7	26	56	1,082	106	193	105	371	88	**6,436**	133	*5,760*
98	**318**	**22**	**46**	**9**	**37**	**93**	**1,742**	**175**	**331**	**184**	**600**	**161**	**10,239**	**296**	*9,465*
1,105	**3,100**	**495**	**512**	**118**	**440**	**1,770**	**25,963**	**1,972**	**3,551**	**2,058**	**6,524**	**1,569**	**132,440**	**3,199**	—
1,083	*2,879*	*459*	*458*	*106*	*388*	*1,769*	*24,087*	*1,843*	*3,296*	*1,898*	*5,916*	*1,489*	—	*2,911*	*122,136*
2,032	4,351	775	1,291	267	901	1,943	36,107	2,997	6,400	3,848	12,698	3,312	200,336		*191,742*

TABLE 52—

II.—Metalliferous Mines (including the Stratified Ironstone

NOTE.—*For the Number of Separate Fatal*

Place or Cause of Accident.	Iron Ore and Ironstone Mines.						Other Mines under the Metalliferous Mines Regulation Acts.					
	Under the Coal Mines Act.		Under the Metalliferous Mines Regulation Acts.		**All Iron Ore and Ironstone Mines.**		At Tin Mines in Cornwall.	At Lead and Zinc Mines.	At Slate Mines.	At all other Mines.	**All Non-ferrous Metalliferous Mines.**	
	Cleveland.	Lincolnshire and Northamptonshire.	Cumberland and North Lancashire.	Elsewhere.	**1934.**	*1933.*					**1934.**	*1933.*
	A. NUMBER OF PERSONS KILLED.											
Explosions of Firedamp ..	—	—	—	—	—	—	—	—	—	—	—	—
FALLS OF GROUND.												
At the working face	4	2	1	—	7	*5*	—	2	2	1	5	—
On roads while repairing or enlarging	—	—	1	—	1	—	—	—	—	—	—	—
On roads while otherwise working or passing ..	1	—	—	—	1	*1*	—	—	—	—	—	—
In shafts	—	—	—	—	—	—	—	—	—	—	—	—
Total	5	2	2	—	9	*6*	—	2	2	1	5	—
SHAFT ACCIDENTS.												
Overwinding	—	—	—	—	—	—	—	—	—	—	—	—
Ropes or chains breaking ..	—	—	—	—	—	—	—	—	—	—	—	—
Whilst descending or ascending by machinery	—	—	—	—	—	—	—	—	—	—	—	—
Falling into shaft from surface	—	—	—	—	—	—	—	—	—	—	—	—
Falling from part way down..	—	—	—	—	—	—	—	—	—	—	—	—
Things falling into shaft from surface	—	—	—	—	—	*1*	—	—	—	—	—	—
Things falling from part way down	—	—	—	—	—	—	—	—	—	—	—	—
Other shaft accidents ..	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	*1*	—	—	—	—	—	—
UNDERGROUND HAULAGE ACCIDENTS.												
Ropes or chains breaking ..	—	—	—	—	—	—	—	—	—	—	—	—
Run over or crushed by trams or tubs	—	—	—	—	—	*1*	—	1	—	1	2	—
Other haulage accidents ..	—	—	1	—	1	—	—	—	—	—	—	—
Total	—	—	1	—	1	*1*	—	1	—	1	2	—
MISCELLANEOUS UNDERGROUND.												
By explosives..	—	—	—	—	—	*3*	—	—	—	—	—	*3*
Suffocation by natural gases	—	—	—	—	—	—	—	—	—	—	—	—
By underground fires ..	—	—	—	—	—	—	—	—	—	—	—	—
Irruptions of water	—	—	—	—	—	—	—	—	—	—	—	—
By electricity	—	—	—	—	—	—	—	—	—	—	—	—
By machinery	—	—	—	—	—	—	—	—	—	—	—	—
Other accidents	—	—	1	—	1	*1*	1	1	2	—	4	*1*
Total	—	—	1	—	1	*4*	1	1	2	—	4	*4*
Total Underground ..	5	2	4	—	11	*12*	1	4	4	2	11	*4*
ON SURFACE.												
By machinery	—	—	—	—	—	—	—	—	—	—	—	—
Boiler explosions	—	—	—	—	—	—	—	—	—	—	—	—
On railways, sidings or tramways	—	—	—	—	—	—	—	—	—	—	—	—
Electricity	—	—	—	—	—	—	—	—	—	—	—	—
Other accidents	—	—	—	—	—	—	—	1	—	—	1	—
Total on Surface ..	—	—	—	—	—	—	—	1	—	—	1	—
Grand Total ..	5	2	4	—	11	—	1	5	4	2	12	—
Corresponding figures for the Year 1933	*4*	*1*	*6*	*1*	—	*12*	*1*	—	*3*	—	—	*4*
Estimated number of man-shifts worked in 1934 (thousands)	654	83	569	79	1,385	*1,032*	421	418	815	962	2,616	*2,633*

* See note † to Table 45.

continued.

Mines in Cleveland, Lincolnshire and Northamptonshire).

and Non-fatal Accidents see Table 45.

Iron Ore and Ironstone Mines.							Other Mines under the Metalliferous Mines Regulation Acts.						
Under the Coal Mines Act.		Under the Metalliferous Mines Regulation Acts.		**All Iron Ore and Ironstone Mines. 1934.**		*Total Number of Persons disabled for more than 3 days in 1933.*	At Tin Mines in Cornwall.	At Lead and Zinc Mines.	At Slate Mines.	At all other Mines.	**All Non-ferrous Metalliferrous Mines. 1934.**		*Total Number of Persons disabled for more than 3 days in 1933.*
Cleveland.	Lincolnshire and Northamptonshire.	Cumberland and North Lancashire.	Elsewhere.	**Total Number of Persons disabled for more than 3 days.**	Number of Persons seriously Injured*						**Total Number of Persons disabled for more than 3 days.**	Number of Persons seriously Injured*	
B. NUMBER OF PERSONS INJURED WHO WERE DISABLED FOR MORE THAN 3 DAYS.													
1	—	—	—	**1**	1	—	—	—	—	—	—	—	*2*
121	8	51	5	**185**	11	*122*	18	34	28	35	**115**	3	*61*
2	—	—	—	**2**	—	*3*	1	1	—	1	**3**	1	—
1	—	—	—	**1**	—	*4*	10	1	—	2	**13**	—	*4*
—	—	—	—	—	—	—	—	—	—	—	—	—	*2*
124	**8**	**51**	**5**	**188**	**11**	*129*	**29**	**36**	**28**	**38**	**131**	**4**	*67*
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	1	—
—	—	1	—	**1**	—	*1*	—	—	—	—	—	—	*1*
} —	—	—	—	—	—	—	1	—	1	1	**3**	—	*1*
} 2	—	1	—	**3**	—	*1*	2	—	—	—	**2**	—	—
1	—	1	—	**2**	—	*3*	2	3	—	1	**6**	—	*9*
3	—	**3**	—	**6**	—	*5*	**5**	**3**	**1**	**2**	**11**	**1**	*11*
1	—	—	—	**1**	—	—	—	—	—	1	**1**	—	—
41	4	17	3	**65**	5	*30*	—	16	2	7	**25**	—	*20*
26	—	32	2	**60**	1	*37*	17	17	12	22	**68**	—	*52*
68	**4**	**49**	**5**	**126**	**6**	*67*	**17**	**33**	**14**	**30**	**94**	—	*72*
3	—	—	—	**3**	4	*4*	—	1	2	3	**6**	7	*1*
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	1	2	—	**3**	—	*1*	3	8	10	4	**25**	2	*10*
159	20	63	8	**250**	4	*160*	52	30	113	100	**295**	10	*207*
162	**21**	**65**	**8**	**256**	**8**	*165*	**55**	**39**	**125**	**107**	**326**	**19**	*218*
358	**33**	**168**	**18**	**577**	**26**	*366*	**106**	**111**	**168**	**177**	**562**	**24**	*370*
—	—	2	—	**2**	—	*6*	3	4	5	5	**17**	1	*10*
—	—	—	—	—	—	—	—	—	—	—	—	—	—
12	4	5	—	**21**	—	*13*	3	16	10	10	**39**	3	*32*
—	—	—	—	—	—	—	—	1	—	—	**1**	2	—
11	1	26	—	**38**	2	*30*	12	25	101	39	**177**	6	*133*
23	**5**	**33**	—	**61**	2	*49*	**18**	**46**	**116**	**54**	**234**	**12**	*175*
381	**38**	**201**	**18**	**638**	**28**	—	**124**	**157**	**284**	**231**	**796**	**36**	—
255	*28*	*124*	*8*	—	*24*	*415*	*77*	*108*	*164*	*196*	—	*20*	*545*

See opposite.

TABLE 52—

III.—Quarries more

NOTE.—*For the Number of Separate Fatal*

Place or Cause of Accident.	Quarries at which the Principal Mineral got was							Great Britain.	
	Iron-stone.	Lime-stone (other than Chalk, &c.).	Sand-stone.	Slate.	Igneous Rocks.	Clay and Brick Earth.	Other Mine-rals.	1934.	*1933.*
	A. NUMBER OF PERSONS KILLED.								
INSIDE THE QUARRIES. (*i.e.*, inside the actual pits, holes, or excavations.)									
Falls of Ground.									
From beyond the person's own working-place	—	3	—	—	—	3	2	**8**	*5*
From the person's own working-place	—	—	2	2	2	3	7	**16**	*14*
Total	—	**3**	**2**	**2**	**2**	**6**	**9**	**24**	*19*
By Blasting.									
While charging or tamping	—	—	—	—	2	—	—	**2**	*1*
From stones projected by shots, when persons had not taken sufficient shelter	—	—	—	—	2	—	—	**2**	*3*
From miss-fire shots..	—	1	—	—	—	—	—	**1**	*1*
Other accidents	—	—	—	1	—	—	—	**1**	*1*
Total	—	**1**	—	**1**	**4**	—	—	**6**	*6*
During Descent or Ascent.									
Falling from paths, steps or ladders	—	—	—	—	—	—	—	—	—
When descending or ascending by machinery	—	—	1	—	—	—	—	1	—
Other accidents	—	—	—	—	—	—	—	—	—
Total	—	—	**1**	—	—	—	—	**1**	—
Miscellaneous.									
Ropes or chains breaking	—	—	—	—	—	—	—	—	—
Machinery	—	—	1	—	—		—	**1**	*1*
Boiler explosions	—	—	—	—	—		—	—	—
On inclined and engine planes ..	—	—	1	—	—	1	—	**2**	*1*
On railways, sidings or tramways ..	1	—	1	—	—	1	1	**4**	*1*
Falling from ledges	—	2	1	—	3	—	—	**6**	*3*
Electricity	—	—	—	—	—	—		—	—
Other accidents	1	2	2	—	2	—	—	**7**	*7*
Total	**2**	**4**	**6**	—	**5**	**2**	**1**	**20**	*13*
Total Inside Quarries ..	**2**	**8**	**9**	**3**	**11**	**8**	**10**	**51**	*38*
OUTSIDE THE QUARRIES.									
Machinery	—	1	1	—	1	—	2	**5**	*3*
Boiler explosions	—	—	—	—	—	—	—	—	—
On inclined and engine planes ..	—	—	—	—	—	—	—	—	—
On railways, sidings or tramways ..	—	1	—	—	1	—	1	**3**	*2*
Electricity	—	—	—	—	—	—	—	—	—
Other accidents	—	2	—	1	—	2	—	**5**	*3*
Total Outside Quarries ..	—	**4**	**1**	**1**	**2**	**2**	**3**	**13**	*8*
Grand Total	**2**	**12**	**10**	**4**	**13**	**10**	**13**	**64**	—
Corresponding figures for the Year 1933	*3*	*13*	*4*	*4*	*10*	*5*	*7*	—	*46*
Average Number of Persons employed in 1934	2,353	15,079	7,973	6,637	14,524	11,959	10,843	69,368	*65,967*

* *See* Note † to Table 45.

continued.

than 20 feet deep.

and Non-fatal Accidents see Table 50.

Quarries at which the Principal Mineral got was							Great Britain, 1934.		*Total Number of Persons disabled for more than 3 days in 1933.*
Iron-stone.	Lime-stone (other than Chalk, &c.)	Sand-stone.	Slate.	Igneous Rocks.	Clay and Brick Earth.	Other Minerals.	**Total Number of Persons disabled for more than 3 days.**	Number of Persons seriously injured. *	
B. NUMBER OF PERSONS INJURED WHO WERE DISABLED FOR MORE THAN 3 DAYS.									
} 19	165	54	36	107	140	54	575	{ 30 / 61 }	*495*
19	**165**	**54**	**36**	**107**	**140**	**54**	**575**	**91**	*495*
—	4	—	2	9	1	—	**16**	16	}
1	2	3	—	7	4	—	**17**	17	} *48*
—	8	—	—	2	—	—	**10**	10	
—	3	5	1	1	—	—	**10**	10	}
1	**17**	**8**	**3**	**19**	**5**	—	**53**	**53**	*48*
4	17	3	2	5	4	3	**38**	1	*42*
—	—	2	—	—	—	—	**2**	1	—
—	1	—	19	3	1	—	**24**	1	*16*
4	**18**	**5**	**21**	**8**	**5**	**3**	**64**	**3**	*58*
—	1	2	1	—	1	—	**5**	1	*6*
5	20	5	4	23	7	15	**79**	10	*90*
—	—	—	—	—	—	—	**—**	—	*2*
—	20	—	1	3	6	2	**32**	6	*36*
50	188	35	37	109	117	88	**624**	25	*565*
5	14	11	4	7	9	11	**61**	17	*64*
—	—	—	—	—	—	—	**—**	—	*1*
92	720	218	390	709	183	129	**2,441**	62	*2,055*
152	**963**	**271**	**437**	**851**	**323**	**245**	**3,242**	**121**	*2,819*
176	**1,163**	**338**	**497**	**985**	**473**	**302**	**3,934**	**268**	*3,420*
2	15	24	15	28	3	21	**108**	5	*98*
—	—	1	—	—	—	—	**1**	—	—
—	9	—	4	4	3	1	**21**	4	*6*
7	63	14	52	59	37	25	**257**	22	*233*
—	—	—	—	—	—	1	**1**	1	*4*
11	186	150	298	233	62	77	**1,017**	27	*814*
20	**273**	**189**	**369**	**324**	**105**	**125**	**1,405**	**59**	*1,155*
196	**1,436**	**527**	**866**	**1,309**	**578**	**427**	**5,339**	**327**	—
128	*1,205*	*466*	*701*	*1,205*	*494*	*376*	—	*247*	*4,575*

See opposite.

TABLE 53.—*Total Number of Persons Injured by Accidents at Mines to the Period of Disablement and the*

Period of Disablement.	Major Injuries.								
	Fractures.					Dislocations.		Hernia.	Total.
	Thigh.	Leg.	Arm.	Rib.	Head.	Upper Extremity.	Lower Extremity.		
(i) MINES UNDER THE COAL MINES									
Number of Persons Injured who were disabled for:—									
More than 3 days and under 8 days	—	—	—	1	—	—	1	7	9
8 days and under 2 weeks ..	1	—	1	1	1	—	—	8	12
2 weeks and under 6 weeks ..	—	11	10	24	5	6	2	19	77
6 weeks and under 13 weeks ..	3	48	33	18	5	4	6	27	144
13 weeks and under 26 weeks ..	1	71	19	5	1	3	4	45	149
26 weeks or longer..	11	34	7	—	2	—	2	8	64
Number of Persons who had not recovered from injury at end of year	48	270	52	30	12	14	10	50	486
Total†	**64**	**434**	**122**	**79**	**26**	**27**	**25**	**165**	**942**
(ii) MINES UNDER THE COAL MINES									
Number of Persons Injured who were disabled for:—									
More than 3 days and under 8 days	—	—	—	—	—	—	—	—	—
8 days and under 2 weeks ..	—	1	2	—	—	1	—	1	5
2 weeks and under 6 weeks ..	—	6	35	13	2	9	2	8	75
6 weeks and under 13 weeks ..	—	31	58	21	6	4	4	38	162
13 weeks and under 26 weeks ..	3	55	22	4	8	1	1	33	127
26 weeks or longer..	2	23	7	2	—	—	—	4	38
Number of Persons who had not recovered from injury at end of year	35	189	53	19	15	8	1	58	378
Total†	**40**	**305**	**177**	**59**	**31**	**23**	**8**	**143**	**786**
(iii) MINES UNDER THE COAL MINES									
Number of Persons Injured who were disabled for:—									
More than 3 days and under 8 days	—	—	—	—	—	1	—	1	2
8 days and under 2 weeks ..	—	—	2	1	—	1	—	5	9
2 weeks and under 6 weeks ..	—	1	12	6	3	6	1	8	37
6 weeks and under 13 weeks ..	—	4	34	7	—	1	1	24	71
13 weeks and under 26 weeks ..	1	6	7	1	—	1	—	18	34
26 weeks or longer..	—	5	2	1	—	—	—	1	9
Number of Persons who had not recovered from injury at end of year	10	31	24	3	3	2	—	17	90
Total†	**11**	**47**	**81**	**19**	**6**	**12**	**2**	**74**	**252**
(iv) STRATIFIED IRONSTONE MINES OF									
Number of Persons Injured who were disabled for:—									
More than 3 days and under 8 days	—	—	—	—	—	—	—	—	—
8 days and under 2 weeks ..	—	—	—	—	—	—	—	—	—
2 weeks and under 6 weeks ..	—	—	—	1	—	—	—	—	1
6 weeks and under 13 weeks ..	—	2	1	1	—	—	—	1	5
13 weeks and under 26 weeks ..	—	1	—	—	—	—	—	2	3
26 weeks or longer..	—	—	—	—	—	—	—	—	—
Number of Persons who had not recovered from injury at end of year	—	2	1	1	—	—	—	—	4
Total	—	**5**	**2**	**3**	—	—	—	**3**	**13**

* Excluding Stratified Ironstone mines of Cleveland,
† Including cases in which the period of disablement

and Quarries in Great Britain in the Year 1934, *classified according Nature of the Injury received.*

Minor Injuries.									Other Injuries.	Grand Total.	
To Head.	To Eyes.	To Hand.	To Foot.	To Arm.	To Leg.	To Rib.	To Back.	Total.		1934.	*1933.*
ACT.*—Workers at the Coal Face (77,202,000 Man-shifts worked in 1934).											
965	1,065	2,943	1,343	886	1,606	111	788	9,707	564	**10,280**	*8,999*
1,529	1,210	4,670	1,621	1,364	2,330	185	1,273	14,182	809	**15,003**	*13,539*
2,011	1,544	11,234	3,689	2,726	5,526	616	2,968	30,314	1,880	**32,271**	*29,383*
364	353	2,270	1,077	533	1,622	174	674	7,067	469	**7,680**	*6,568*
87	82	377	214	99	442	24	131	1,456	181	**1,786**	*1,630*
10	20	70	21	20	91	3	32	267	30	**361**	*325*
335	356	1,383	539	385	1,201	109	614	4,922	397	**5,805**	*5,103*
5,306	**4,630**	**22,951**	**8,509**	**6,014**	**12,824**	**1,222**	**6,481**	**67,937**	**4,334**	**73,213**	*65,570*
ACT.*—Other Workers Below Ground (74,060,000 Man-shifts worked in 1934.)											
626	345	1,795	802	546	1,070	63	535	5,782	428	**6,210**	*5,710*
1,069	411	3,286	1,116	856	1,618	100	866	9,322	590	**9,917**	*9,328*
1,450	535	9,022	2,253	1,914	3,976	362	1,909	21,421	1,330	**22,826**	*22,127*
216	80	1,929	552	442	1,057	122	357	4,755	343	**5,260**	*5,187*
53	24	258	93	69	297	19	91	904	117	**1,148**	*1,167*
8	9	33	12	6	48	2	19	137	17	**192**	*211*
203	96	1,004	307	296	797	61	327	3,091	309	**3,778**	*3,701*
3,627	**1,500**	**17,333**	**5,136**	**4,129**	**8,869**	**729**	**4,107**	**45,430**	**3,136**	**49,352**	*47,457*
ACT.*—Surface Workers (49,074,000 Man-shifts worked in 1934.)											
87	104	377	155	126	172	16	80	1,117	69	**1,188**	*1,080*
149	89	665	276	149	310	25	126	1,789	115	**1,913**	*1,579*
240	143	1,825	552	401	732	87	279	4,259	299	**4,595**	*4,329*
31	29	418	133	111	195	27	54	998	75	**1,144**	*1,051*
9	5	59	20	20	49	5	11	178	30	**242**	*235*
2	3	10	4	1	14	—	—	34	4	**47**	*43*
30	27	230	69	54	133	13	37	593	60	**743**	*787*
548	**400**	**3,586**	**1,209**	**862**	**1,606**	**173**	**587**	**8,971**	**652**	**9,875**	*9,109*
CLEVELAND, LINCOLNSHIRE AND NORTHAMPTONSHIRE. (737,000 Man-shifts worked in 1934.)											
4	—	14	5	2	3	—	5	33	1	**34**	*18*
10	1	23	11	4	5	—	13	67	2	**69**	*50*
21	6	71	17	15	29	5	22	186	15	**202**	*132*
8	1	16	9	4	10	1	4	53	2	**60**	*32*
1	2	1	1	—	2	—	—	7	2	**12**	*5*
1	—	—	—	—	1	—	—	2	—	**2**	*3*
8	1	7	4	6	3	1	3	33	3	**40**	*43*
53	**11**	**132**	**47**	**31**	**53**	**7**	**47**	**381**	**25**	**419**	*283*

Lincolnshire and Northamptonshire. *See* Section (iv).
was not known.

TABLE 53—

Period of Disablement.	Major Injuries.								
	Fractures.					Dislocations.		Hernia.	Total.
	Thigh.	Leg.	Arm.	Rib.	Head.	Upper Extremity.	Lower Extremity.		
(v) IRON MINES UNDER THE									
Number of Persons Injured who were disabled for:—									
More than 3 days and under 8 days	—	—	—	—	—	—	—	—	—
8 days and under 2 weeks ..	—	—	—	1	—	—	—	—	1
2 weeks and under 6 weeks ..	—	—	—	1	—	—	—	—	1
6 weeks and under 13 weeks ..	—	—	—	2	—	—	—	—	2
13 weeks and under 26 weeks ..	—	1	—	—	—	—	—	1	2
26 weeks or longer..	—	—	—	—	—	—	—	—	—
Number of Persons who had not recovered from injury at end of year	—	2	2	—	—	—	—	—	4
Total	**—**	**3**	**2**	**4**	**—**	**—**	**—**	**1**	**10**
(vi) OTHER MINES UNDER THE									
Number of Persons Injured who were disabled for:—									
More than 3 days and under 8 days	—	—	—	—	—	—	—	—	—
8 days and under 2 weeks ..	—	—	—	—	—	—	—	1	1
2 weeks and under 6 weeks ..	—	—	—	1	—	—	—	—	1
6 weeks and under 13 weeks ..	—	1	4	—	—	—	—	1	6
13 weeks and under 26 weeks ..	—	2	1	—	—	—	—	1	4
26 weeks or longer..	—	—	—	—	—	—	—	—	—
Number of Persons who had not recovered from injury at end of year	1	4	2	—	2	—	—	2	11
Total	**1**	**7**	**7**	**1**	**2**	**—**	**—**	**5**	**23**
(vii) IRONSTONE QUARRIES									
Number of Persons Injured who were disabled for:—									
More than 3 days and under 8 days	—	—	—	—	—	—	—	—	—
8 days and under 2 weeks ..	—	—	—	—	—	—	—	—	—
2 weeks and under 6 weeks ..	—	—	—	1	—	—	—	—	1
6 weeks and under 13 weeks ..	—	—	—	1	—	—	—	1	2
13 weeks and under 26 weeks ..	—	3	—	—	—	—	—	—	3
26 weeks or longer..	—	1	—	—	—	—	—	—	1
Number of Persons who had not recovered from injury at end of year	—	1	1	—	—	—	—	—	2
Total	**—**	**5**	**1**	**2**	**—**	**—**	**—**	**1**	**9**
(viii) OTHER QUARRIES									
Number of Persons Injured who were disabled for:—									
More than 3 days and under 8 days	—	—	1	1	—	—	—	—	2
8 days and under 2 weeks ..	—	—	—	—	1	1	—	1	3
2 weeks and under 6 weeks ..	—	1	4	13	1	5	1	4	29
6 weeks and under 13 weeks ..	—	13	9	6	1	1	1	16	47
13 weeks and under 26 weeks ..	—	25	7	4	2	2	—	11	51
26 weeks or longer..	1	6	2	—	—	—	—	1	10
Number of Persons who had not recovered from injury at end of year	9	67	13	4	3	2	2	8	108
Total	**10**	**112**	**36**	**28**	**8**	**11**	**4**	**41**	**250**

continued.

Minor Injuries.									Other Injuries.	Grand Total.	
To Head.	To Eyes.	To Hand.	To Foot.	To Arm.	To Leg.	To Rib.	To Back.	Total.		1934.	*1933.*
METALLIFEROUS MINES REGULATION ACTS. (648,000 Man-shifts worked in 1934.)											
1	1	3	4	1	3	—	1	14	4	18	*12*
11	5	11	1	2	7	—	4	41	1	43	*25*
6	4	38	13	5	14	1	13	94	4	99	*61*
1	—	10	3	1	4	—	4	23	7	32	*19*
—	—	—	1	—	—	—	—	1	—	3	*3*
1	1	—	1	—	—	—	—	3	—	3	*2*
2	1	7	1	1	3	—	1	16	1	21	*10*
22	**12**	**69**	**24**	**10**	**31**	**1**	**23**	**192**	**17**	**219**	*132*
METALLIFEROUS MINES REGULATION ACTS. (2,616,000 Man-shifts worked in 1934.)											
11	3	36	16	8	11	—	6	91	8	99	*57*
19	7	90	19	22	11	3	6	177	5	183	*111*
23	8	158	37	24	48	4	22	324	15	340	*230*
5	2	31	17	5	11	5	3	79	13	98	*49*
2	—	6	4	—	5	1	2	20	2	26	*20*
1	—	1	—	—	—	—	—	2	—	2	*2*
5	6	12	3	2	6	—	1	35	2	48	*26*
66	**26**	**334**	**96**	**61**	**92**	**13**	**40**	**728**	**45**	**796**	*545*
MORE THAN 20 FEET DEEP. (2,353 persons employed in 1934.)											
—	2	6	3	2	3	—	2	18	1	19	*9*
5	1	20	9	2	7	—	3	47	2	49	*17*
9	4	30	14	6	16	5	7	91	6	98	*63*
—	—	3	3	—	2	—	1	9	4	15	*27*
—	—	—	—	—	1	—	—	1	—	4	*2*
—	1	1	—	—	—	—	—	2	—	3	—
—	1	4	—	—	—	—	1	6	—	8	*10*
14	**9**	**64**	**29**	**10**	**29**	**5**	**14**	**174**	**13**	**196**	*123*
MORE THAN 20 FEET DEEP. (67,015 persons employed in 1934.)											
43	60	243	74	45	73	5	36	579	36	617	*548*
70	82	435	101	107	106	16	60	977	50	1,030	*831*
101	143	869	292	209	343	43	110	2,110	125	2,264	*2,032*
25	38	215	87	34	96	10	22	527	40	614	*557*
9	13	34	13	7	22	1	8	107	15	173	*155*
4	5	4	6	2	5	—	4	30	2	42	*27*
17	39	93	31	24	37	6	24	271	24	403	*294*
269	**380**	**1,893**	**604**	**428**	**682**	**81**	**264**	**4,601**	**292**	**5,143**	*4,447*

TABLE 54.—*Number of Persons killed and injured by Accidents, and the number killed and injured per* 1,000 *persons employed at Mines in Great Britain under the Coal Mines Act (except Stratified Ironstone Mines of Cleveland, Lincolnshire and Northamptonshire), during the Year* 1934, *classified according to Age.*

Inspection Division.	Persons Employed Below-ground Aged					Persons Employed Above-ground Aged				
	Under 16 years.	16 and under 18 years.	18 and under 20 years.	20 years and over.	All Ages.	Under 16 years.	16 and under 18 years.	18 and under 20 years.	20 years and over.	All Ages.
	(*a*) Number of Persons Killed.									
Scotland	2	2	4	98	106	2	2	1	8	13
Northern	4	6	5	131	146	1	—	1	12	14
Yorkshire	4	3	5	85	97	—	—	1	9	10
North Midland ..	—	3	1	95	99	1	—	—	7	8
North Western ..	3	6	3	331	343	—	2	—	10	12
Cardiff and Forest of Dean	1	3	5	83	92	—	—	1	5	6
Swansea	1	—	2	56	59	—	—	—	6	6
Midland and Southern	—	1	1	48	50	—	—	—	5	5
All Divisions: **1934**	**15**	**24**	**26**	**927**	**992**	**4**	**4**	**4**	**62**	**74**
1933	*15*	*28*	*31*	*675*	*749*	*5*	*3*	*5*	*53*	*66*
	(*b*) Number of Persons Injured and Disabled for more than 3 Days.									
Scotland	132	352	574	11,368	12,426	152	160	96	868	1,276
Northern	1,436	1,740	1,983	19,094	24,253	404	288	221	1,366	2,279
Yorkshire	813	1,023	1,068	18,550	21,454	161	126	129	1,231	1,647
North Midland ..	441	637	633	15,040	16,751	92	87	80	951	1,210
North Western ..	270	399	572	12,877	14,118	88	97	90	1,005	1,280
Cardiff and Forest of Dean	612	1,060	1,197	13,147	16,016	37	49	59	835	980
Swansea	287	463	532	7,389	8,671	47	31	27	703	808
Midland and Southern	150	190	283	7,889	8,512	41	51	36	631	759
All Divisions: **1934**	**4,141**	**5,864**	**6,842**	**105,354**	**122,201**	**1,022**	**889**	**738**	**7,590**	**10,239**
1933	*3,251*	*5,866*	*6,926*	*96,628*	*112,671*	*834*	*863*	*708*	*7,060*	*9,465*
	(*c*) Number of Persons Killed and Injured per 1,000 Persons Employed.									
Scotland	150	163	135	197	191	81	88	54	58	62
Northern	308	288	289	181	197	125	119	93	51	66
Yorkshire	226	217	162	190	191	80	74	69	49	53
North Midland ..	242	215	154	209	207	65	68	59	51	53
North Western ..	189	172	163	204	201	72	77	57	49	52
Cardiff and Forest of Dean	180	204	197	201	200	102	94	110	61	65
Swansea	193	202	188	221	216	127	85	69	90	91
Midland and Southern	194	161	155	192	189	70	80	49	52	54
All Divisions: **1934**	**229**	**218**	**190**	**197**	**198**	**92**	**89**	**69**	**54**	**60**
1933	*215*	*203*	*176*	*180*	*182*	*86*	*79*	*64*	*51*	*56*

TABLE 55.—*Number of Persons Injured by Accidents at Mines under the Coal Mines Act, from* 1908, *so far as particulars are available, distinguishing the Principal Causes.*

Period or Year.	Below Ground.						Above Ground.		Total Below and Above Ground.	Number of Persons Injured per 1,000 Persons Employed.
	Explosions of Firedamp or Coal-dust.	Falls of Ground.	Shaft Accidents.	Haulage Accidents.	Other Miscellaneous Accidents.	Total Below Ground.	On Railways, Sidings or Tramways.	Other Accidents.		
(a) Total Number of Persons injured.*										
Annual Average 1908–1912	*166*	*55,218*	*813*	*40,766*	*45,943*	*142,906*	*3,987*	*7,400*	*154,293*	*148·1*
Annual Average 1913–1917†	*118*	*59,687*	*795*	*39,483*	*54,717*	*154,800*	*3,972*	*9,254*	*168,026*	*153·8*
Annual Average 1918–1922†	*103*	*48,970*	*627*	*33,953*	*44,182*	*127,835*	*3,486*	*8,752*	*140,073*	*116·7*
Annual Average 1923–1927†	111	63,794	1,012	46,982	62,267	174,166	4,348	11,283	189,797	164·8
Annual Average 1928–1932	101	53,992	334	39,402	49,137	142,966	3,487	7,810	154,263	168·8
1926§	49	29,975	832	21,200	30,199	82,255	2,357	6,250	90,862	172·9
1927	112	59,592	842	40,864	58,758	160,168	3,943	9,338	173,449	167·2
1928	70	56,130	520	41,659	51,542	149,921	3,522	8,347	161,790	170·0
1929	108	61,910	378	41,640	59,134	163,170	3,721	9,008	175,899	181·4
1930	123	58,026	348	41,142	54,717	154,356	3,488	8,437	166,281	176·2
1931	96	49,068	202	37,975	43,638	130,979	3,551	6,941	141,471	161·3
1932	109	44,824	223	34,595	36,655	116,406	3,153	6,315	125,874	152·1
1933	64	44,068	158	32,216	36,429	112,935	3,094	6,390	122,419	153·5
1934	93	47,286	247	33,733	41,233	122,592	3,153	7,114	132,859	166·6
(b) Number of Persons seriously injured.‡										
Annual Average 1908–1912	198	2,244	198	1,443	920	5,003	192	534	5,729	5·5
Annual Average 1913–1917	139	1,989	135	1,305	709	4,277	175	476	4,928	4·8
Annual Average 1918–1922†	128	1,721	96	1,117	765	3,827	166	404	4,397	3·8
Annual Average 1923–1927†	125	1,885	114	1,242	854	4,220	161	383	4,764	4·1
Annual Average 1928–1932	107	1,615	65	967	629	3,383	125	236	3,744	4·1
1926§	55	987	111	678	444	2,275	87	238	2,600	4·3
1927	122	1,918	123	1,219	829	4,211	135	347	4,693	4·5
1928	79	1,789	98	1,081	697	3,744	134	285	4,163	4·4
1929	120	1,837	94	1,052	724	3,827	128	273	4,228	4·4
1930	128	1,620	31	1,002	689	3,470	125	217	3,812	4·0
1931	101	1,449	66	873	507	2,996	113	196	3,305	3·8
1932	110	1,381	35	826	527	2,879	123	210	3,212	3·9
1933	73	1,319	48	716	483	2,639	97	188	2,924	3·7
1934	99	1,376	111	730	602	2,918	102	196	3,216	4·0

* In 1924 and subsequent years accidents which disabled the person injured for more than 3 days were reportable, the limit in 1923 and earlier years being 7 days.

† Excluding in Section (*a*) the years 1915–18, for which particulars are not available, and in Sections (*a*) and (*b*) the years 1921 and 1926, which were affected by prolonged stoppages of work. ‡ *See* Note † to Table 45. § In this year work at coal mines was reduced by a prolonged dispute and the number of persons injured by accidents was correspondingly affected. For the basis of the injury rates per 1,000 person employed, *see* page 46 (Part IV) of the Sixth Annual Report.

TABLE 56.—*Number of Cases of Accident and Disease* in respect of which Compensation was Paid under the Workmen's Compensation Acts, and the Amount of Compensation paid in the Mining and Quarrying Industries from the Year* 1908, *so far as particulars are available.*

Year.	Average Number of Persons Employed.	Number of Cases.				Amount of Compensation Paid.				Total Amount Paid.
		Accidents.		Diseases.		Accidents.		Diseases.		
		Fatal Cases.	Disablement Cases.†	Fatal Cases.	Disablement Cases.	Fatal Cases.	Disablement Cases.†	Fatal Cases.	Disablement Cases.	
		Mines.								
						£	£	£	£	£
1908	1,047,862	1,301	137,622	—	1,689	226,226	601,848	—	13,382	841,456
1909	984,994	1,456	154,798	3	2,730	237,308	724,269	493	26,795	988,865
1910	1,072,571	1,347	166,709	—	3,783	220,973	818,302	—	42,507	1,081,782
1911	1,059,642	1,711	178,466	1	5,026	281,183	905,999	24	68,017	1,255,223
1912	1,086,113	1,246	167,959	2	5,949	202,367	897,090	439	85,831	1,185,727
1913	1,114,210	1,312	195,387	—	7,478	227,418	1,010,637	—	113,203	1,351,258
1914	1,046,357	1,768	179,899	—	8,928	307,035	1,024,054	—	164,833	1,495,922
1915–8		Particulars are not available.								
1919	1,184,038	1,248	134,991	1	9,174	271,051	1,250,096	200	225,422	1,746,769
1920	1,249,884	1,231	134,738	1	9,407	274,727	1,711,674	79	343,094	2,329,574
1921	1,109,023	833	103,784	1	8,711	184,464	1,677,110	300	395,637	2,257,511
1922	1,122,511	1,067	201,370	—	12,585	232,009	2,605,300	—	587,295	3,424,604
1923	1,214,660	1,282	245,479	1	15,768	280,357	2,935,172	189	594,943	3,810,661
1924	1,202,597	1,265	214,171	2	15,504	348,830	2,352,447	547	674,390	3,376,214
1925	1,157,085	1,235	197,388	3	15,779	375,642	2,290,134	115	609,656	3,275,547
1926	772,883	787	117,252	5	13,187	228,767	1,945,489	1,297	540,726	2,716,279
1927	1,052,216	1,129	118,978	2	15,273	354,696	2,170,878	249	488,338	3,014,161
1928	944,666	1,073	185,823	3	14,772	324,211	2,199,485	992	501,990	3,026,678
1929	930,780	1,161	196,851	3	16,126	333,664	2,227,126	829	488,207	3,049,826
1930	933,813	1,123	190,745	2	16,847	333,188	2,162,192	611	505,458	3,001,449
1931	862,314	996	170,887	1	16,828	308,512	2,092,452	220	540,005	2,941,189
1932	807,848	907	154,355	5	16,016	272,232	2,007,389	1,049	504,549	2,785,219
1933	781,361	901	147,441	1	15,208	278,972	1,868,117	300	426,307	2,573,696
1934‡	779,209	906	158,558	3	15,140	276,034	1,933,734	1,039	443,656	2,654,463
		Quarries.								
1908	85,475	88	5,284	1	2	11,501	23,056	230	11	34,798
1909	88,880	83	5,536	—	1	12,072	28,586	—	2	40,660
1910	90,318	91	5,823	—	2	11,199	35,056	—	4	46,259
1911	91,957	83	5,817	—	2	11,177	38,274	—	149	49,600
1912	84,703	64	5,440	—	2	8,665	39,143	—	5	47,813
1913	87,541	66	6,001	—	5	8,638	35,855	—	36	44,529
1914	82,709	83	5,674	—	1	11,799	35,435	—	2	47,236
1915–8		Particulars are not available.								
1919	49,235	34	2,973	—	3	6,897	35,768	—	9	42,674
1920	68,792	56	4,151	—	8	12,010	53,169	—	52	65,231
1921	62,722	42	3,687	—	1	9,238	55,929	—	4	65,171
1922	62,781	35	3,897	—	1	8,422	63,159	—	14	71,595
1923	68,979	49	5,292	—	7	11,162	72,408	—	70	83,640
1924	74,771	57	6,359	—	9	14,512	72,610	—	35	87,157
1925	76,274	89	6,742	—	5	29,194	78,506	—	54	107,754
1926	77,791	62	6,267	—	6	17,318	80,173	—	35	97,526
1927	76,017	61	6,575	—	22	18,349	87,451	—	83	105,883
1928	73,691	52	6,638	—	5	14,403	78,830	—	28	93,288
1929	79,430	60	6,926	—	14	17,056	83,029	—	64	100,149
1930	73,599	72	6,657	—	9	21,901	85,341	—	158	107,400
1931	72,639	51	6,530	—	15	14,063	84,724	—	98	98,885
1932	70,401	50	5,656	—	17	16,996	74,655	—	322	91,973
1933	61,847	44	5,199	—	15	14,197	75,778	—	208	90,183
1934‡	65,036	46	5,901	—	21	15,974	74,968	—	315	91,257

* Excluding cases resulting from Schemes made under Section 47 of the Workmen's Compensation Act, 1925 and the Workmen's Compensation (Silicosis and Asbestosis) Act, 1930.

† Including cases where the payment for compensation was continued from the previous year. This circumstance largely accounts for the smaller number of accident disablement cases shown in the preceding Tables, which relate only to cases reported during the year.

‡ Provisional figures.

TABLE 57.—*Number of Cases of Disease* amongst Miners for which Compensation under the Workmen's Compensation Acts was paid from* 1908, *so far as particulars are available.*

Nature of Disease.	Annual Averages. 1908–12	1913–17 †	1918–22 †	1923–7 †	1927	1928	1929	1930	1931	1932	1933	1934‡
(i) NEW CASES.												
Nystagmus§	944	2,587	3,225	3,097	1,801	2,554	2,577	3,066	2,729	1,962	1,535	1,742
Subcutaneous Cellulitis of the hand (beat hand)	718	819	980	1,422	2,333	1,349	1,708	1,448	1,289	1,266	1,238	1,199
Subcutaneous Cellulitis or Acute Bursitis:												
Arising at or about the knee (beat knee)	1,043	1,620	1,421	2,542	2,197	2,644	3,406	3,554	3,147	3,076	3,111	3,685
Over the elbow (beat elbow)	91	151	158	311	338	392	458	441	451	403	435	554
Inflammation of the synovial lining of the wrist joint and tendon sheaths	122	187	119	181	217	227	316	298	327	317	366	328
Ankylostomiasis	6	3	—	—	—	—	—	—	—	—	—	—
Other diseases	9	11	9	29	23	15	35	37	53	44	48	70
(ii) CASES CONTINUED FROM PREVIOUS YEAR.												
Nystagmus§	816	2,684	4,319	7,682	7,933	7,264	7,263	7,572	8,353	8,523	8,068	7,135
Subcutaneous Cellulitis of the hand (beat hand)	32	50	62	143	290	112	134	138	129	132	112	112
Subcutaneous Cellulitis or Acute Bursitis:												
Arising at or about the knee (beat knee)	42	76	75	140	105	174	175	228	278	231	207	219
Over the elbow (beat elbow)	6	4	15	17	9	17	35	32	38	24	34	46
Inflammation of the synovial lining of the wrist joint and tendon sheaths	5	10	5	12	23	15	13	16	14	15	24	15
Ankylostomiasis	—	—	—	—	—	—	—	—	—	—	—	—
Other diseases	2	1	2	6	6	12	9	19	21	28	31	38
(iii) TOTAL NUMBER OF CASES.												
Nystagmus§	1,760	5,271	7,544	10,779	9,734	9,818	9,840	10,638	11,082	10,485	9,603	8,877
Subcutaneous Cellulitis of the hand (beat hand)	750	869	1,042	1,565	2,623	1,461	1,842	1,586	1,418	1,398	1,350	1,311
Subcutaneous Cellulitis or Acute Bursitis:												
Arising at or about the knee (beat knee)	1,085	1,696	1,496	2,682	2,302	2,818	3,581	3,782	3,425	3,307	3,318	3,904
Over the elbow (beat elbow)	7	155	173	328	347	409	493	473	489	427	469	600
Inflammation of the synovial lining of the wrist joint and tendon sheaths	127	197	124	193	240	242	329	314	341	332	390	343
Ankylostomiasis	6	3	—	—	—	—	—	—	—	—	—	—
Other diseases	11	12	11	35	29	27	44	56	74	72	79	108

* *See* note * to Table 56.

† Excluding the years 1915–18, for which particulars are not available, and the years 1921 and 1926, which were affected by prolonged stoppages of work.

‡ Provisional figures.

§ In July, 1913, the reference to "Nystagmus" in the Third Schedule of the Workmen's Compensation Act, 1906, was amended so as to cover "the disease known as miners' nystagmus . . . . . whether the symptom of oscillation of the eyeballs be present or not."

TABLE 58.—*Number of Prosecutions, Convictions and Total Amount of Fines and Costs imposed for Offences at Mines and Quarries committed during the Year* 1934.

(i) MINES.

Nature of Offence.	Prosecutions (*i.e.*, No. of separate charges.)	Convictions.	Charges withdrawn or not proven.	Charges dismissed.	Total Amount of Fines and Costs imposed. £ s. d.
A. Owners, Agents, Managers and Under Managers.*					
Management	3	3	—	—	25 10 0
Ventilation	4	4	—	—	8 8 0
Safety Lamps	4	4	—	—	26 2 0
Shafts and Outlets	18	16	—	2	112 8 0
Winding	4	3	—	1	20 19 3
Boreholes and working near water	1	1	—	—	10 0 0
Explosives Order	11	11	—	—	11 4 0
Machinery	1	1	—	—	1 0 0
Inspection as to safety	10	10	—	—	16 0 0
Rescue Work Regulations	18	16	—	2	42 16 0
Employment of boys, girls or women	2	2	—	—	5 8 0
Illegal Overtime—Coal Mines Regulation Act, 1908, Sec. 1 (i)	32	2	28	2	39 12 0
Register—Coal Mines Regulation Act, 1908, Sec. 2 (i)	32	3	28	1	9 2 0
Total in 1934	**140**	**76**	**56**	**8**	**328 9 3**
Total in 1933	*52*	*40*	*2*	*10*	*313 4 0*
B. Under Officials and Workmen.					
Interfering with the ventilation	5	5	—	—	12 8 0
Contraventions of provisions as to:—					
Safety Lamps	15	14	—	1	21 4 0
Matches and smoking	59	49	6	4	88 14 9
Explosives	60	49	5	6	69 6 0†
Timbering	5	5	—	—	6 0 0‡
Trams or Tubs (underground haulage)	16	15	—	1	17 12 0
Travelling on haulage roads, travelling or working on roads or in working places not made secure	13	10	3	—	12 8 0
Electricity	4	4	—	—	16 8 0
Offences connected with the inspection of shaft or workings	8	8	—	—	26 2 0
Wilfully damaging, removing or interfering with apparatus, etc., or wilfully defacing notices, etc.	4	4	—	—	3 4 11
Disobeying orders	13	13	—	—	21 9 0
Being about the mine in a state of intoxication	4	4	—	—	7 10 0
Sleeping in the mine	8	7	—	1	11 15 0
Carrying timber, parts of machines, tools, etc., while ascending the shaft in a cage	32	26	2	4	18 8 0
Behaving in a violent or disorderly manner	37	31	2	4	44 10 6
Contraventions of rules as to care and treatment of animals, or cruelty to animals‖	2	2	—	—	3 0 0
Endangering life and limb	20	20	—	—	47 10 3
Riding ponies underground	16	16	—	—	11 3 6
Failing to fence entrances to gates not in actual course of working, Section 37	2	2	—	—	7 14 0
Jumping from workmen's train while in motion, G.R. 23	8	8	—	—	5 13 0
Entering or working in an unauthorised part of the mine	7	6	1	—	7 0 0
Failing to report an accident as soon as might be, G.R. 59	1	1	—	—	§
Failing to report a workman's infringement to manager, G.R. 62	1	1	—	—	§
Illegal Overtime—Coal Mines Regulation Act, 1908, Sec. 1 (i)	13	—	—	13	—
Total in 1934	**353**	**300**	**19**	**34**	**459 0 11**
Total in 1933	*339*	*290*	*13*	*36*	*334 19 6*

* The number of mines to which these proceedings related was 13 in 1934 and 8 in 1933.

† *See* footnotes ‡ and §.

‡ The penalty imposed in three cases is included under "Explosives."

§ Included under "Explosives."

‖ In addition, there were seven prosecutions of workmen under the "Protection of Animals Act," resulting in seven convictions. Penalties amounting to £37 were imposed and two offenders were sentenced to imprisonment for one month.

(ii) **QUARRIES.**—There were three prosecutions under the Quarries Act, involving three charges against the owners of quarries for breaches of Special Rules 44, 47 and 57, relating to "First Aid," "Provision of a Stretcher" and "Provision of a Rope," respectively. Penalties amounting to £4 3*s.* 0*d.* were imposed in respect of breaches of Rules 44 and 47, while the charge in respect of Rule 57 was dismissed.

In addition, seven prosecutions were instituted against the occupiers of quarries for offences against the Factory and Workshop Act (six in respect of breaches of Electricity Regulation No. 21, and one in respect of fencing of machinery) and one under the Notice of Accidents Act, 1906, for failing to notify the occurrence of a fatal accident. Convictions were obtained on all charges and penalties amounting to £29 8*s.* 0*d.* were imposed.

TABLE 59.—*Results of Examinations for Firemen's, Examiners' and Deputies' Certificates and Shotfirers' Certificates, in the Year* 1934.

Note.—Subsection 1 of Section 15 of the Coal Mines Act, 1911, provides that after the first day of January, 1913, a person shall not be qualified to be appointed or to be a *fireman, examiner,* or *deputy,* unless he :—

(*a*) is the holder of a first or second class certificate of competency under this Act or is twenty-five years of age or upwards and has had at least five years' practical experience underground in a mine, of which no less than two years have been at the face of the workings of a mine; and

(*b*) has obtained a certificate in the prescribed form from a mining school or other institution or authority approved by the Secretary of State as to his ability to make accurate tests (so far as practicable with a safety lamp) for inflammable gas, and to measure the quantity of air in an air current and that his hearing is such as to enable him to carry out his duties efficiently; and

(*c*) has within the preceding five years obtained from such approved school, institution, or authority as aforesaid, or from a duly qualified medical practitioner, a certificate in the prescribed form to the effect that his eyesight is such as to enable him to make accurate tests for inflammable gas and that his hearing is such as to enable him to carry out his duties efficiently, the expense of obtaining which shall in the case of a person employed at the time as fireman, examiner or deputy, be borne by the owner of the mine.

Shotfirers.—The Explosives in Coal Mines Order provides that in mines in which permitted explosives are required to be used no person shall be qualified to be appointed a Shotfirer unless, having other qualifications, he has obtained the like certificates as to his ability to make accurate tests for inflammable gas and as to his eyesight as are required in the case of firemen, examiners or deputies.

The provisions as to gas testing and eyesight certificates are not applicable to persons employed in mines in which inflammable gas is unknown.

Particulars of the results of the Examinations under Subsections 1 (*b*) and 1 (*c*) of Section 15 of the Coal Mines Act, 1911, held during the year 1934 are as follows :—

—	DIVISIONS.								Great Britain.
	Scotland	Northern	York-shire	North Midland	North Western	Cardiff and Forest of Dean	Swansea	Midland and Southern	
	A.—RESULT OF EXAMINATIONS FOR FIREMEN'S, EXAMINERS' AND DEPUTIES' CERTIFICATES (INCLUDING SHOTFIRERS' CERTIFICATES).								
Number of Candidates presenting themselves for examination ..	289	937	401	275	269	292	108	249	2,820*
Number who passed in—									
All Subjects for Full Certificate	279	824	318	222	235	168	101	196	2,343
Subjects qualifying them to act as Firemen at Mines where gas is unknown, viz., Air Measuring and Hearing ..	—	9	3	5	—	3	—	9	29
Subjects qualifying them to act as Shotfirers, viz : Gas Testing	2	16	3	1	7	1	—	3	33
Total ..	**281**	**849**	**324**	**228**	**242**	**172**	**101**	**208**	**2,405**
Number who failed in the following subjects :—									
Gas Testing	3	34	5	4	5	50	1	12	114
Hearing	—	—	—	—	—	—	—	—	—
Air Measurement	5	39	65	36	19	52	5	23	244
Air Measurement and Gas Testing	—	15	7	7	3	18	1	6	57
Gas Testing and Hearing ..	—	—	—	—	—	—	—	—	—
Air Measurement and Hearing ..	—	—	—	—	—	—	—	—	—
All Subjects	—	—	—	—	—	—	—	—	—
Total ..	**8**	**88**	**77**	**47**	**27**	**120**	**7**	**41**	**415**
	B.—RE-EXAMINATION OF PERSONS HOLDING FIREMEN'S, EXAMINERS' AND DEPUTIES' CERTIFICATES (INCLUDING SHOTFIRERS).								
Number of Candidates Re-examined	54	99	79	54	306	2	22	140	756
Number who passed	52	98	79	52	306	2	22	139	750
Number who failed to pass in :—									
Eyesight	1	1	—	2	—	—	—	1	5
Hearing	1	—	—	—	—	—	—	—	1
Eyesight and Hearing	—	—	—	—	—	—	—	—	—
Total ..	**2**	**1**	**—**	**2**	**—**	**—**	**—**	**1**	**6**

* Of these candidates 69 were re-admitted to subsequent examinations. Having passed in one or more subjects at one examination they were allowed to take the subjects in which they had failed at a subsequent examination.

TABLE 60.—*Numbers of Candidates who Attended the Examinations for Certificates of Competency and for Surveyors' Certificates in May and November,* 1934, *the Numbers who Passed, and the Percentages of Passes.*

Examination Centre.	First Class.			Second Class.			Surveyors.		
	Attended.	Passed.	Percentages.	Attended.	Passed.	Percentages.	Attended.	Passed.	Percentages.
	MAY, 1934.								
Edinburgh	40	9	22·5	31	7	22·6	46	8	17·4
Newcastle	22	4	18·2	29	8	27·6	18	4	22·2
Sheffield	50	13	26·0	62	15	24·2	36	6	16·6
Wigan	20	4	20·0	17	4	23·5	8	2	25·0
Cardiff	43	4	9·3	34	10	29·4	13	4	30·7
Birmingham ..	17	7	41·2	25	8	32·0	15	3	20·0
Total ..	192	41	21·4	198	52	26·3	136	27	19·8
	NOVEMBER, 1934.								
Edinburgh	25	4	16·0	13	4	30·8	25	2	8·0
Newcastle	16	7	43·7	18	3	16·7	11	2	18·2
Sheffield	28	8	28·6	37	7	18·9	28	3	10·7
Wigan	4	2	50·0	6	3	50·0	6	1	16·6
Cardiff	29	4	13·8	20	2	10·0	5	—	—
Birmingham ..	13	1	7·7	13	1	7·7	8	—	—
Total ..	115	26	22·6	107	20	18·7	83	8	9·6

TABLE 61.—*Numbers of Candidates who were Examined by the Board for Mining Examinations for Certificates of Competency and for Surveyors' Certificates, and the Numbers who passed in* 1913 *and each Year from* 1924.

Examination.	First Class.		Second Class.		Surveyors.		Total.		Total for Year.	
	Examined.	Passed.	Examined.	Passed.	Examined.	Passed.	Examined.	Passed.	Examined.	Passed.
1913 May	163	29	342	106	103	13	608	148	1,012	287
1913 November ..	105	42	203	59	96	38	404	139		
1924 May	391	83	456	112	178	15	1,025	210	1,737	413
1924 November ..	290	106	288	76	134	21	712	203		
1925 May	328	122	389	90	156	16	873	228	1,560	374
1925 November ..	278	76	253	59	156	11	687	146		
1926 November ..	359	111	385	105	185	26	929	242	929	242
1927 May	249	84	318	100	149	24	716	208	1,292	390
1927 November ..	201	70	222	95	153	17	576	182		
1928 May	243	47	271	75	152	29	666	151	1,113	283
1928 November ..	172	60	141	46	134	26	447	132		
1929 May	224	64	206	81	163	30	593	175	998	301
1929 November ..	163	57	134	47	108	22	405	126		
1930 May	213	52	211	53	138	22	562	127	971	250
1930 November ..	164	53	127	55	118	15	409	123		
1931 May	170	41	192	52	129	25	491	118	829	212
1931 November ..	124	35	133	47	81	12	338	94		
1932 May	168	42	203	67	115	27	486	136	779	209
1932 November ..	116	25	103	34	74	14	293	73		
1933 May	175	58	165	71	124	25	464	154	769	225
1933 November ..	122	27	109	31	74	13	305	71		
1934 May	192	41	198	52	136	27	526	120	831	174
1934 November ..	115	26	107	20	83	8	305	54		

TABLE 62.—*Pithead Baths at Coal Mines: Accommodation in Use and in Course of Construction at 31st December, 1934.*

Note—Exclusive of accommodation for mine officials only. Full particulars of the baths included in this statement will be found in the Annual Report of the Miners' Welfare Committee for the Year 1934.

A bath installation which has been erected in two instalments is included in the group appropriate to the larger instalment.

Welfare District.	Number of Collieries Equipped with Baths.*		Number of Persons Employed at the Collieries at December, 1933.	Accommodation of the Baths Provided.				
	Completed.	In course of Construction.		Total.	By the Colliery Owners.	Partly by the Colliery Owners and partly out of the Miners' Welfare Fund.	Mainly out of the Miners' Welfare Fund.	Under the Mining Industry Act, 1926.
ENGLAND AND WALES.								
Northumberland	9 (3)	1	10,029	8,566	—	400	2,350	5,816
Durham	16 (5)	1	31,591	35,156	—	—	2,114	33,042
Cumberland and Westmorland	2	—	1,862	1,916	—	—	—	1,916
Lancashire and Cheshire	16 (2)	2 (1)	18,510	18,826	339	1,601	—	16,886
Yorkshire, South	28 (7)	1 (1)	48,540	46,903	2,643	1,687	9,929	32,644
Yorkshire, West	11 (7)	1 (1)	13,628	14,508	—	—	500	14,008
Nottinghamshire	6 (3)	3 (2)	14,112	16,030	—	—	—	16,030
Derbyshire, North	6 (3)	4 (4)	14,771	16,512	—	—	—	16,512
Derbyshire, South	—	—	—	—	—	—	—	—
Staffordshire, North	11 (9)	—	12,630	13,284	612	—	—	12,672
Cannock Chase	3	—	3,468	3,576	—	—	—	3,576
South Staffordshire and Worcestershire	1 (1)	—	1,399	1,176	—	—	—	1,176
Leicestershire	2	—	1,973	2,016	—	—	—	2,016
Warwickshire	5 (5)	1 (1)	7,064	6,902	—	—	—	6,902
Shropshire	—	—	—	—	—	—	—	—
Forest of Dean	1 (1)	—	1,095	1,056	—	—	—	1,056
Somersetshire	2	—	672	720	—	—	—	720
Bristol	—	—	—	—	—	—	—	—
Kent	3 (1)	1	6,731	6,443	—	—	915	5,528
South Wales and Monmouthshire	23 (2)	2 (2)	29,733	31,110	—	—	—	31,110
North Wales	1 (1)	—	2,700	3,000	—	—	—	3,000
Total	146 (50)	17 (12)	220,508	227,700	3,594	3,688	15,808	204,610
SCOTLAND.								
Fife, Clackmannan, Kinross and Sutherland	7 (1)†	1	6,666	5,933	523	—	—	5,410
Lothians (Mid and East) and Peebles	5 (1)	—	3,201	3,144	140	—	—	3,004
Lanarkshire, Linlithgow, Stirling, Renfrew and Dumbarton	22 (16)†	3 (3)	13,015	15,440	890	—	—	14,550
Ayrshire, Dumfries and Argyll	6	—	4,260	3,916	—	—	—	3,916
Total	40 (18)	4 (3)	27,142	28,433	1,553	—	—	26,880
Great Britain	**186 (68)**	**21 (15)**	**247,650**	**256,133**	**5,147**	**3,688**	**15,808**	**231,490**

* The figures in brackets denote the numbers of baths provided with a Canteen.
† Includes one case where the original baths are being extended.

TABLE 63.—*Development in the Sinking of New Pits and Drifts in Great Britain in the Year* 1934.

A.—COAL MINES ACT.

Note.—The names of Drifts and Small Pits are shown in italics.

(I) PITS STARTED AND COMPLETED. (81.)

Northumberland : *Barley Hill, Midgeholme East Drift, Midgeholme West Drift.* **Durham :** *Dans Castle Drift, East Park, Finchale Drift, Lawson's Drift, Station Drift, Tunnel Drift, Windmill Drift, Wood Drift.* **Cumberland :** *Penton Drift.* **Lancashire and Cheshire :** *Burnt Edge, Laffak, (since discontinued) New California.* **South Yorkshire :** *Clough Green, Fell Lane,* Grimethorpe (Deepening), *Hill Top.* **West Yorkshire :** *Brown Royd, Calder, Pildacre, Spring Wood.* **North Derbyshire :** *Bagot, Barlborough Common, Birchwood, Brierley Wood, Horsley, New Horsley Kilburn, Townend, Walgrove, Wingfield.* **North Staffordshire :** *Beacon House, Burley, Cottage (since abandoned), Hall End Park, Hanley Hayes (since abandoned), Hayes Wood No.* 2, *Kerry Hill, Megacre (since abandoned), Snapes (since abandoned), Swan.* **Cannock Chase :** *West.* **South Staffordshire and Worcestershire :** *Alley, Bentley, Bradley Clay,* Cawney Bank, *Ettingshall Hall, Ettingshall Hall No.* 2, *Hurst, Merry Hill, Moors, Neachells (Wednesfield), Neachells (Willenhall), Thorns.* **Forest of Dean :** *Fancy No.* 2, *Hollybush, Nelson No.* 3, *Shutcastle.* **South Wales and Monmouth :** *Blaencuffin, Graigfawr (Level), Littlebrook, Llwynyffynon, Pantygof, Penllwynhelyg, Trigloin (Level), Wembley.* **Fife and Clackmannan :** *Craigrie, Mary.* **Lanarkshire, etc. :** *Arden Glen (since abandoned), Auchengean, Banknock, Dumback, Eastern Windyedge No.* 1, *Greenhill No.* 4, *Hillwood No.* 2, *Kittymuir No.* 2, *Midton No.* 3, *Ravenshall,* Rosehall Nos. 1 and 2 (Surface Mines), *Spalehall No.* 2.

(II) PITS STARTED AND NOT COMPLETED. (32.)

Northumberland : Blue Bell, Nelson. **Cumberland :** *Range No.* 2 *Drift.* **West Yorkshire :** Denby Grange Caphouse (Deepening to Beeston Seam). **South Derbyshire :** Swadlincote (Deepening). **Cannock Chase :** Hilton Main No. 2 (Sinking). **South Staffordshire and Worcestershire :** *Bayton No.* 5 (*New Mamble*), *Ettingshall Park No.* 10, *New Hurst.* **Warwickshire :** Griff No. 4 (Deepening downcast shaft). **Shropshire :** *Chorley, Station Road.* **South Wales and Monmouth :** *Avon Hill, Cwmfelin, Gelli, Oakwood, Rock Level (since abandoned),* Werntarw Drift to Hafod Seam. **North Wales :** *Lletty New Talwrn.* **Fife and Clackmannan :** *Zetland (since discontinued).* **Lanarkshire, etc. :** *Braeside, Burniebrae No.* 3, *Dalmacoulter No.* 2, *Forkens, Kittymuirhill, Mauldslie No.* 2, *Midton No.* 4, *Whiteside, Whitrigg No.* 6. **Ayrshire, etc. :** *North Fergushill No.* 3, Shewalton Nos. 5 and 6.

(III) OTHER PITS IN PROGRESS OR SINKING RESUMED. (12.)

Northumberland : *Kellah, Plashetts "Doctor" Drift.* **South Yorkshire :** *Warren Vale.* **North Staffordshire :** *Bunker's Hill, Butt Lane, Eastwood and Mousecroft, Glass House No.* 2, *Park, Woodstock.* **South Wales and Monmouth :** *Felinfran Slant.* **Lanarkshire, etc. :** *Dullatur, Easter Jaw.*

(IV) PITS COMPLETED (EXCEPT THOSE WHICH WERE STARTED DURING THE YEAR). (22.)

Northumberland : West Wylam (Dukes Hagg Shaft). **Durham :** *Old Eldon Drift, South Church.* **Cumberland :** *Range Drift (since abandoned).* **Lancashire and Cheshire :** *Sunfield.* **Cannock Chase :** *Pretoria.* **South**

Staffordshire and Worcestershire : *Ettingshall Park, Phoenix,* Shatterford. **Leicestershire :** New Lount (Deepening). **Forest of Dean :** Northern United. **South Wales and Monmouth :** Aberpergwm No. 2, *Blaenlash Slant,* Broom, *Forest, Maesmelyn.* **North Wales :** *Coppice Adit.* **Lanarkshire, etc. :** *Glendale, Spoutcroft, Telfer, Whitecraighead.* **Ayrshire, etc. :** *Polquhirter.*

B.—METALLIFEROUS MINES REGULATION ACTS.

(I) Mines started and completed. (11.)

Barytes—Cothercott (Shropshire).
Fluorspar—Redburn (Durham).
Gold Ore—Gwynfynydd, St. David's (Merioneth).
Gypsum—Thrumpton Nos. 1 and 2 (Nottinghamshire).
Limestone—Mutton Hole (Dorsetshire), Balls Green (Gloucester (Bristol)).
Potters' Clay—Grange, Povington (Dorsetshire).
Slate—Westminster (Denbighshire), Abercorris (Merioneth).

(II) Mines started and not completed. (10.)

Barytes—Potts Ghyll (Cumberland).
Gold Ore—Princess Marina (Merioneth).
Tin Ore—Dimson, Drakewalls, Great Work, Mount Wellington, Redmoor, West Budnic, Wheal Breage, Worvas Down (Cornwall).

(III) Mines completed (except those which were started duping the year). (2.)

Gold Ore—Ogofau (Carmarthen).
Tin Ore—Porkellis (Cornwall).

TABLE 64.—*Imports of Petroleum and its Products into Great Britain and Northern Ireland during the Year* 1934.

(*Provisional figures.*)

Country of Consignment.	Crude Oil.	Refined Products.								Grand Total.
		Kerosene.	Motor Spirit.	Other Spirit.	Lubricating Oil.	Gas Oil.	Fuel Oil.	Other Sorts.	Total.	
	Thousand Gallons.									
British Empire—										
Trinidad and Tobago	10,975	*	59,967	—	—	—	34,366	—	94,333	**105,308**
India (British)	—	—	—	—	*	—	1	1	2	**2**
Straits Settlements and Dependencies	3,361	—	4,907	—	*	—	—	—	4,907	**8,268**
Sarawak	—	—	6,206	—	—	—	—	—	6,206	**6,206**
Canada	—	*	—	—	23	—	—	*	23	**23**
Irish Free State	—	1,537	620	6	26	5	9	*	2,203	**2,203**
Other British Countries	—	*	2	—	1	—	*	—	3	**3**
Total: British Empire	14,336	1,537	71,702	6	50	5	34,376	1	107,677	**122,013**
Foreign Countries—										
United States of America	5,858	73,595	133,508	75	61,735	54,625	21,102	200	344,840	**350,698**
Mexico	114,199	22,667	58,729	—	9,444	923	80,021	—	171,784	**285,983**
Ecuador	6,488	—	—	—	—	—	—	—	—	**6,488**
Dutch West Indies†	23,476	10,358	472,359	6,343	1	9,796	370,864	—	869,721	**893,197**
Peru	82,528	—	8,900	—	—	315	6,063	—	15,278	**97,806**
Dutch Borneo	—	3,196	53,571	2,494	8	2	9	—	59,280	**59,280**
Iran (Persia)	216,539	59,768	225,920	—	—	18,825	99,883	—	404,396	**620,935**
Iraq	13,403	—	—	—	—	—	—	—	—	**13,403**
Egypt	—	*	4,631	—	*	—	*	—	4,631	**4,631**
Russia	—	7,090	29,817	562	21,034	3,580	3,519	—	65,602	**65,602**
Roumania	232	43,104	50,700	10,259	4,364	46,807	40,801	—	196,035	**196,267**
Poland	—	—	—	—	2,571	—	—	—	2,571	**2,571**
Germany	*	30	221	80	2,935	—	1,064	38	4,368	**4,368**
Netherlands	—	*	16,739	1	76	—	—	*	16,816	**16,816**
Belgium	—	*	152	—	904	28	*	400	1,484	**1,484**
France	*	832	*	*	301	2	7,890	6	9,031	**9,031**
Other Foreign Countries	1	1	1,429	—	28	*	3	1	1,462	**1,463**
Total: Foreign Countries	462,724	220,641	1,056,676	19,814	103,401	134,903	631,219	645	2,167,299	**2,630,023**
Grand Total	**477,060**	**222,178**	**1,128,378**	**19,820**	**103,451**	**134,908**	**665,595**	**646**	**2,274,976**	**2,752,036**
Total in 1933 (Revised)	*392,647*	*185,247*	*1,073,114*	*15,296*	*102,564*	*113,694*	*558,970*	*256*	*2,049,141*	*2,441,788*

* Less than 500 gallons.

† Includes Venezuela.

TABLE 65.—*Quantity of Petroleum Products Imported, Exported and Retained for Home Consumption in Great Britain and Northern Ireland during the Years* 1931 *to* 1934.

Note.—The figures for 1934 are subject to revision.

Year.	Imports.				Home Production from Imported Petroleum and from Oil Shale.			Retained.*	
	Total.	Submitted to Further Refining.	Re-exported.	Retained.	Total.	Exported.	Retained.	Total.	*Percentage of Retained Home Production to Total.*
	Million Gallons.								%
					Motor Spirit.				
1931..	905·2	12·7	45·2	847·3	180·2	30·7	149·5	996·8	*15·0*
1932..	971·2	9·0	42·6	919·6	159·3	34·1	125·2	1,044·8	*12·0*
1933..	1,073·1	17·0	22·0	1,034·1	149·4	45·3	104·1	1,138·2	*9·1*
1934..	1,128·4	17·7	26·1	1,084·6	144·8	56·9	87·9	1,172·5	*7·5*
					Other Spirit.				
1931..	18·1	13·5	1·5	3·1	20·9	3·4	17·5	20·6	*85·0*
1932..	14·9	8·0	3·7	3·2	17·0	3·5	13·5	16·7	*80·8*
1933..	15·3	12·5	0·3	2·5	20·7	2·0	18·7	21·2	*88·2*
1934..	19·8	15·6	0·6	3·6	24·4	1·6	22·8	26·4	*86·4*
					Kerosene.				
1931..	270·9	73·0	15·2	182·7	53·4	11·5	41·9	224·6	*18·7*
1932..	216·7	50·0	15·9	150·8	43·0	8·9	34·1	184·9	*18·4*
1933..	185·2	10·1	13·0	162·1	38·4	9·2	29·2	191·3	*15·3*
1934..	222·2	9·0	9·2	204·0	34·5	10·5	24·0	228·0	*10·5*
					Gas Oil.				
1931..	85·0	17·1	3·2	64·7	35·5	5·2	30·3	95·0	*31·9*
1932..	97·1	0·8	4·4	91·9	36·9	9·0	27·9	119·8	*23·3*
1933..	113·7	0·3	2·2	111·2	46·3	18·8	27·5	138·7	*19·8*
1934..	134·9	—	4·8	130·1	53·4	24·4	29·0	159·1	*18·2*
					Lubricating Oil.				
1931..	97·5	†	2·8	†	19·0†	6·0	†	98·7	†
1932..	86·3	†	3·8	†	19·1†	7·1	†	86·2	†
1933..	102·6	†	6·8	†	19·1†	7·1	†	100·9	†
1934..	103·5	†	6·4	†	24·7†	10·1	†	100·9	†
					Fuel and Diesel Oil.				
1931..	485·8	106·0	3·9	375·9	193·8	9·8	184·0	559·9 (*185·1*)‡	*32·9*
1932..	493·4	88·4	1·7	403·3	159·1	7·5	151·6	554·9 (*181·0*)‡	*27·3*
1933..	559·0	67·6	3·7	487·7	141·7	10·5	131·2	618·9 (*246·0*)‡	*21·2*
1934..	665·6	13·4	7·0	645·2	133·4	9·8	123·6	768·8 (*353·0*)‡	*16·1*

* These figures, which take no account of changes in stocks, only give an approximate indication of the quantities made available for consumption.

† As the figures of home production from imported petroleum and from shale do not include lubricating oils manufactured at home from imported lubricants by blending or by further chemical treatment, it is not possible to differentiate between retained imports and retained home production.

‡ The figures in brackets, which are included in the total, represent the quantities shipped as bunkers for the use of steamers engaged in Foreign trade and fishing vessels.

APPENDIX B.—PRINCIPAL OFFICIAL PUBLICATIONS RELATING TO THE MINING AND QUARRYING INDUSTRIES.

In the case of annual publications the price given is that of the current issue. The price in brackets includes postage.

Acts.

British Hydrocarbon Oils Production Act, 1934. Price, 1*d*. (1½d.).
Coal Mines Act, 1911. Price, 1*s*. 6*d*. (1*s*. 8*d*.).
Coal Mines Act, 1914. Price, ½*d*. (1*d*.).
Coal Mines Act, 1919. Price, 2*d*. (2½*d*.).
Coal Mines Act, 1926. Price, 1*d*. (1½*d*.).
Coal Mines Act, 1930. Price, 6*d*. (7*d*.).
Coal Mines Act, 1931. Price, 1*d*. (1½*d*.).
Coal Mines Act, 1932. Price, 1*d*. (1½*d*.).
Coal Mines (Checkweigher) Act, 1894. Price, ½*d*. (1*d*.).
Coal Mines (Weighing of Minerals) Act, 1905. Price, ½*d*. (1*d*.).
Checkweighing in Various Industries Act, 1919. Price, 2*d*. (2½*d*.).
Coal Mines (Minimum Wage) Act, 1912. Price, 1½*d*. (2*d*.).
Coal Mines Regulation Act, 1887. (Sections, 1, 3, 12, 13, 14 and 15). Price, 8½*d*. (10*d*.).
Coal Mines Regulation Act, 1908. Price, 1*d*. (1½*d*.).
Coal Mines Regulation (Amendment) Act, 1917. Price, 1*d*. (1½*d*.).
Employment of Women, Young Persons, and Children Act, 1920. Price, 3*d*. (4*d*.).
Factory and Workshop Act, 1901. Price, 1*s*. (1*s*. 2*d*.).
Metalliferous Mines Regulation Act, 1872. Price, 2*s*. (2*s*. 1*d*.).
Metalliferous Mines Regulation Act, 1875. Price, 4*d*. (4½*d*.).
Mines (Working Facilities and Support) Act, 1923. Price, 6*d*. (6½*d*.).
Mines (Working Facilities and Support) Act, 1925. Price, 1*d*. (1½*d*.).
Mines (Working Facilities) Act, 1934. Price, 1*d*. (1½*d*.).
Mining Industry Act, 1920. Price, 3*d*. (3½*d*.).
Mining Industry Act, 1926. Price, 6*d*. (7*d*.).
Mining Industry (Welfare Fund) Act, 1925. Price, 1*d*. (1½*d*.).
Mining Industry (Welfare Fund) Act, 1931. Price, 1*d*. (1½*d*.).
Mining Industry (Welfare Fund) Act, 1934. Price, 1*d*. (1½*d*.).
Notice of Accidents Act, 1906. Price, 1*d*. (1½*d*.).
Petroleum Production Act, 1918. Price, 1*d*. (1½*d*.).
Petroleum Production Act, 1934. Price, 2*d*. (2½*d*.).
Quarries Act, 1894. Price, 2*d*. (2½*d*.).
Workmen's Compensation Act, 1923. Price, 6*d*. (6½*d*.).
Workmen's Compensation Act, 1925. Price, 1*s*. (1*s*. 1*d*.).
Workmen's Compensation Act, 1926. Price, 1*d*. (1½*d*.).
Workmen's Compensation Act, 1931. Price, 1*d*. (1½*d*.).
Workmen's Compensation (Coal Mines) Act, 1934. Price, 3*d*. (3½*d*.).
Workmen's Compensation (Silicosis and Asbestosis) Act, 1930. Price, 1*d*. (1½*d*.).

Coal Mines Act, 1911 : Regulations and Orders relating to Safety and Health (issued annually). Price, 1*s*. 6*d*. (1*s*. 9*d*.).

The following are *the more important* Regulations of a general character appearing in the above volume, separate copies of which may be obtained :—

General Regulations.

(1) General Regulations of 10th July, 1913. S.R. & O. 748/1913. (This is the main code of General Regulations under the Coal Mines Act, 1911.). Price, 3*d*. (3½*d*.).

GENERAL REGULATIONS—*continued.*

(2) Additional Regulations of 30th July, 1920. S.R. & O. 1423/1920. (Precautions against Coal Dust and Spontaneous Combustion; Electricity on the Surface; Workings under Moss, &c.). Price, 4*d.* (4½*d.*).

(3) Amending Regulations of 20th November, 1924. S.R. & O. 1364/1924. (Precautions against Coal Dust). Price, 1*d.* (1½*d.*).

(4) Coal Mines General Regulations (Safety Lamps), 1927. S.R. & O. 1155/1927. (Amending ss. 33 & 34 of Coal Mines Act, 1911.) Price, 1*d.* (1½*d.*).

(5) Coal Mines General Regulations (Rescue), 1928. S.R. & O. 971/1928. Price, 4*d.* (5*d.*).

(6) Coal Mines (Rescue) Amending Regulations, 1935. S.R. & O. 652/1935. Price 1*d.* (1½*d.*).

(7) Coal Mines General Regulations (First Aid), 1930. S.R. & O. 91/1930. Price, 2*d.* (2½*d.*).

(8) Coal Mines General Regulations (Lighting), 1934. S.R. & O. 562/1934. Price, 2*d.* (2½*d.*).

(9) Coal Mines General Regulations (Firedamp Detectors), 1935. S.R. & O. 414/1935. Price, 1*d.* (1½*d.*)

Explosives in Coal Mines :

Explosives in Coal Mines Order, 1934. S.R. & O. 6/1934. (General Provisions.) Price, 3*d.* (3½*d.*).

Horse Killers—Use of Non-Permitted Explosives in (22nd June, 1931). S.R. & O. 521/1931. Price, 1*d.* (1½*d.*).

Explosives in Coal Mines (Cardox) Order. (31st January, 1934). S.R. & O. 152/1934. Price 1*d.* (1½*d.*).

Ganister Mines :

General Regulations applying to mines in which ganister is worked (1920). S.R. & O. 873/1920. Price, 1*d.* (1½*d.*).

Managers' and Under-Managers' Certificates :

Rules as to Qualifications of Applicants (1933). S.R. & O. 1166/1933. Price, 2*d.* (2½*d.*).

Mining Examinations (Certificates of Competency) Rules, 1935. S.R. & O. 596/1935. Price, 1*d.* (1½*d.*).

Surveyors' Certificates :

Prescribing Qualifications of Surveyors (1923). S.R. & O. 816/1923. Price, 1*d.* (1½*d.*).

Safety Lamp Mines :

Use belowground of Apparatus for the Relighting Electrically of Safety Lamps (1912). S.R. & O. 1628/1912. Price, 1*d.* (1½*d.*).

Search of Persons employed for prohibited Articles (1912). S.R. & O. 510/1912. Price, 1*d.* (1½*d.*).

Use of Flame Safety Lamps fitted with Self-contained Relighting Devices (1929). S.R. & O. 1182/1929. Price, 1*d.* (1½*d.*).

[*See also* General Regulations.]

Safety Lamps (Conditions of Use) Order (1934). S.R. & O. 729/1934. Price, 1*d.* (1½*d.*).

Lamp Bulbs (Marking) Order (1934). S.R. & O. 854/1934. Price, 1*d.* (1½*d.*).

Firedamp Detectors (No. 1) Order, 1935. S. R. & O. 636/1935 Price, 1*d.* (1½*d.*). (No. 2) Order, 1935 S. R. & O. 637/1935. Price, 2*d.* (2½*d.*)

Glanders :

Horses in Coal Mines (Glanders) Order (1923). S.R. & O. 313/1923. Price, 1*d.* (1½*d.*).

Notice of Accidents Act, 1906 :

Notification of certain classes of dangerous occurrences (1906) S.R. & O. 934/1906. Price, 1*d*. (1½*d*.).

Workmen's Compensation Act and Workmen's Compensation (Silicosis) Acts. The following Orders relating to Silicosis schemes and affecting *inter alia* mines and quarries have been issued :—

The Refractories Industries (Silicosis) Scheme, 1931. S.R. & O. 345/1931. Price, 4*d*. (4½*d*.).

The Sandstone Industry (Silicosis) Scheme, 1931. S.R. & O. 346/1931. Price, 4*d*. (4½*d*.).

The Silicosis and Asbestosis (Medical Arrangements) Scheme, 1931, S.R. & O. 341/1931. Price, 4*d*. (4½*d*.).

The Silicosis and Asbestosis (Medical Fees) Regulations, 1931. S.R. & O. 412/1931. Price, 1*d*. (1½*d*.).

The Various Industries (Silicosis) Scheme, 1931. S.R. & O. 342/1931. Price, 3*d*. (3½*d*.).

The Various Industries (Silicosis) Amendment Scheme (Coal Mines). S.R. & O. 1155/1934. Price, 1*d*. (1½*d*.).

The Silicosis and Asbestosis (Medical Arrangements) Amendment Scheme, 1934. S.R. & O. 889/1934. Price, 1*d*. (1½*d*.).

The Various Industries (Silicosis) Amendment Scheme (Hæmatite Iron Ore Mines). S.R. & O. 69/1935. Price, 1*d*. (1½*d*.).

Coal Mines Act, 1930.

Schemes incorporating Amendments approved to 1st January, 1935.

The Central (Coal Mines) Scheme, 1930. Price, 3*d*. (3½*d*.).

District (Coal Mines) Schemes, 1930 :—

Bristol. Price, 3*d*. (3½*d*.).
Cannock Chase. Price, 4*d*. (5*d*.).
Cumberland. Price, 4*d*. (5*d*.).
Durham. Price, 6*d*. (7*d*.).
Forest of Dean. Price, 4*d*. (5*d*.).
Kent. Price, 4*d*. (5*d*.).
Lancashire and Cheshire (incorporating Amendments approved to 28th June, 1935). Price, 6*d*. (7*d*.).
Midland (Amalgamated). Price, 9*d*. (10*d*.).
Northumberland. Price, 4*d*. (5*d*.).
North Staffordshire. Price, 4*d*. (5*d*.).
North Wales. Price, 4*d*. (5*d*.)
Shropshire. Price, 4*d*. (5*d*.)
Scottish. Price, 4*d*. (5*d*.).
Somerset. Price, 3*d*. (3½*d*.).
South Staffordshire (exclusive of Cannock Chase) and Worcestershire. Price, 4*d*. (5*d*.).
South Wales. Price, 9*d*. (10*d*.).
Warwickshire. Price, 4*d*. (5*d*.).

The original Schemes and the Amendments thereto are also obtainable separately.

A series of Orders providing that the Central and District Schemes in operation under Part I of the Coal Mines Act, 1930, may be amended in certain respects have been made by the Board of Trade, and are on sale. Price, 1*d*. each (1½*d*.).

Midland District Amalgamation Order, 28 October, 1930. S.R. & O. 841/1930. Price, 1*d*. each (1½*d*.).

Form of Declaration of Secrecy prescribed 28 October, 1930. S.R. & O. 848/1930. Price, 1*d*. (1½*d*.).

Committees of Investigation (Arbitration) Regulations, dated 30 October, 1930. S.R. & O. 858/1930. Price, 1*d*. (1½*d*.).

COAL MINES ACT, 1930—*continued.*

Coal Mines (Committees of Investigation) Directions dated 30 October, 1930. S.R. & O. 860/1930. Price, 1*d.* (1½*d.*).

Coal Mines (National Board) Order, dated 25 November, 1930. S.R. & O. 1047/1930. Price, 1*d.* (1½*d.*).

Coal Mines (National Board) Rules, dated 25 November, 1930. S.R. & O. 1048/1930. Price, 1*d.* (1½*d.*).

Periodical Reports.

Thirteenth Annual Report of the Secretary for Mines for 1933 (including the Twenty-Sixth Annual Report of H.M. Chief Inspector of Mines for the same period). Price, 3*s.* 6*d.* (3*s.* 10*d.*).

Report of H.M. Electrical Inspector of Mines for the year 1934. Price, 2*s.* (2*s.* 3*d.*).

Reports of H.M. Divisional Inspectors of Mines under the Coal Mines Act, 1911, for 1934 (issued annually) :

Scotland Division	North Western Division
Northern Division	Cardiff and Forest of Dean Division
Yorkshire Division	Swansea Division
North Midland Division	Midland and Southern Division

Each Report price, 1*s.* (1*s.* 2*d.*).

Reports of H.M. Inspectors of Mines and Quarries under the Quarries Act, 1894, and the Metalliferous Mines Regulation Acts, 1872 and 1875, for 1934. Price, 9*d.* (10*d.*).

Thirteenth Report of the Miners' Welfare Fund Committee, 1934. Price, 1*s.* 6*d.* (1*s.* 10*d.*).

Thirteenth Annual Report of the Safety in Mines Research Board, 1934. Price, 2*s.* (2*s.* 3*d.*).

Seventh Annual Report by the Board of Trade under Section 12 on the Working of Part I of the Mining Industry Act, 1926. (Provisions for facilitating the Reorganisation of the Coal Mining Industry.) [Cmd. 4816]. Price, 1*d.* (1½*d.*).

Coal Mining Industry. Quarterly and Annual Statistical Summary of Output and of the Costs of Production, Proceeds and Profits. Price, 1*d.* each (1½*d.*).

Coal Mines Act, 1930. The Working of Schemes under Part I of the Act, Year, 1934. [Cmd. 4769.] Price, 3*d.* (3½*d.*).

Metalliferous Mining and Quarrying Industry, Quarterly Return of Output and Employment. Price, 4*d.* each (5*d.*).

Preliminary Statement (subject to correction) of the Number of Deaths caused by Accidents in and about the Mines and Quarries of Great Britain, together with the Isle of Man, during the year 1934. Price, 2*d.* (2½*d.*).

List of Mines in Great Britain and the Isle of Man (1933) (issued annually), Price, 10*s.* (10*s.* 6*d.*).

List of Quarries in Great Britain and the Isle of Man (1931) (issued triennially). Price, 10*s.* (10*s.* 6*d.*).

Coal Tables, 1924. Return containing Statistics relating to the Production, Consumption, and Imports and Exports of Coal in the British Empire and the principal Foreign countries in recent years (H.C. 168). Price, 1*s.* (1*s.* 1*d.*).

Other Publications.

Accidents :

The following are the latest of the Special Reports on Colliery Accidents :—

Explosion at Llwynypia Colliery, Glamorganshire; by Sir Henry Walker, C.B.E., LL.D., H.M. Chief Inspector of Mines (25th January, 1932). [Cmd. 4150]. Price, 1*s.* 0*d.* (1*s.* 2*d.*).

Explosion at Garswood Hall No. 9 Colliery, Lancashire; by Sir Henry Walker, C.B.E., LL.D., H.M. Chief Inspector of Mines (12th November, 1932). [Cmd. 4292.] Price, 2*s.* (2*s.* 2*d.*).

Explosion at Cardowan Colliery, Lanarkshire; by Sir Henry Walker, C.B.E., LL.D., H.M. Chief Inspector of Mines (16th November, 1932). [Cmd. 4309.] Price, 1*s.* (1*s.* 1*d.*).

Explosion at West Cannock, No. 5 Colliery, Staffordshire, by W. E. T. Hartley, H.M. Divisional Inspector of Mines (16th May, 1933). [Cmd. 4432]. Price, 1*s.* (1*s.* 1½*d.*).

Explosion at Grassmoor Colliery, Derbyshire, by Sir Henry Walker, C.B.E., LL.D., H.M. Chief Inspector of Mines (19th November, 1933). [Cmd. 4550]. Price, 1*s.* (1*s.* 1*d.*).

Explosion at Polmaise No's. 3 and 4 Colliery, Stirlingshire, by E. H. Frazer, H.M. Divisional Inspector of Mines (3rd February, 1934). [Cmd. 4617]. Price, 9*d.* (10*d.*).

Explosions at Bilsthorpe Colliery, Nottinghamshire, by J. R. Felton, O.B.E., H.M. Divisional Inspector of Mines (26th July, 1934). [Cmd. 4780]. Price, 9*d.* (10*d.*).

Abandoned Mines :

Catalogue of Plans :

Vol. I.—Cheshire, Cumberland, Durham, Lancashire, Northumberland, Westmorland, and Isle of Man. Price, 15*s.* (15*s.* 6*d.*).

Vol. II.—Cornwall, Devon, Dorset, Gloucester, Kent, Somerset, Stafford and Worcester. Price, 15*s.* (15*s.* 6*d.*).

Vol. III.—Derby, Leicester, Lincoln, Norfolk, Northampton, Nottingham, Oxford, Warwick and York. Price, 15*s.* (15*s.* 5*d.*).

Vol. IV.—Wales, Monmouth, Salop. Price, 15*s.* (15*s.* 6*d.*).

Vol. V.—Scotland. Price, 15*s.* (15*s.* 6*d.*).

Supplements : Additions and Corrections.

To 31st December, 1929 (Volumes I, II and III). Price, 6*d.* (7*d.*).
" " " 1930 (Volumes I to IV). Price, 9*d.* (11*d.*).
" " " 1931 (Volumes I to V). Price, 1*s.* (1*s.* 2*d.*).
" " " 1932 (Volumes I to V). Price, 9*d.* (10*d.*).
" " " 1933 (Volumes I to V). Price, 1*s.* 3*d.* (1*s.* 5*d.*).
" " " 1934 (Volumes I to V). Price, 1*s.* 3*d.* (1*s.* 4*d.*).

Co-operative Selling :

Reports of the Departmental Committee on Co-operative Selling in the Coal Mining Industry. [Cmd. 2770]. Price, 1*s.* (1*s.* 1*d.*).

Electric Storage Battery Locomotives :

Report of the Judges in connection with the competition for the prize of £1,000 offered by Mr. Charles Markham. Price, 1*s.* 3*d.* (1*s.* 4*d.*).

OTHER PUBLICATIONS—*continued.*

Fuel and Power :

National Fuel and Power Committee :—

Report (September, 1928) (Cmd. 3201). Price, 9*d.* (10*d.*).

Report of the Sub-Committee upon Gas Legislation (Cmd. 3252). Price, 9*d.* (10*d.*).

Interim Report of the Gas Legislation Committee (April, 1932). Price, 1*d.* (1½*d.*). Second Interim Report (January, 1933). Price, 4*d.* (5*d.*). Final Report (April, 1933). Price, 9*d.* (10*d.*).

Area Gas Supply Committee :—

Report of Departmental Committee on Area Gas Supply. Price, 3*s.* (3*s.* 2*d.*).

Health :

Investigations in First-Aid Organisation at Collieries in Great Britain. By Dr. A. J. Cronin. Price, 6*d.* (7*d.*).

Miners' " Beat Knee," " Beat Hand " and " Beat Elbow " :

Report on, by Professor E. L. Collis, M.D., M.R.C.P., and T. L. Llewellyn, M.D. Price, 1*s.* 6*d.* (1*s.* 7½*d.*).

Miners' Nystagmus Committee :

First Report. Price, 1*s.* 6*d.* (1*s.* 7½*d.*).

Second Report. Price, 9*d.* (10*d.*).

Third Report. Price, 9*d.* (10*d.*).

Report on the Occurrence of Silicosis among Sandstone Workers. Price, 1*s.* 6*d.* (1*s.* 7*d.*).

Report on an Inquiry into the Occurrence of Disease of the Lungs from Dust Inhalation in the Slate Industry in the Gwyrfai District. By C. L. Sutherland, M.D., D.P.H., and S. Bryson, D.P.H. Price, 3*d.* (3½*d.*).

Report on Investigation in the Coalfield of South Wales and Monmouth. [Cmd. 3272]. Price, 3*d.* (3½*d.*).

Use of the Guss in Somerset Mines.—Report of the Departmental Committee on. [Cmd. 3200]. Price, 1*s.* 6*d.* (1*s.* 8*d.*).

Report on the Medical Treatment of Men Burned in Colliery Explosions, 1933. Price, 6*d.* (7*d.*).

Overtime :

Reports of Special Inquiries into the Working of Overtime in Coal Mines :

In Lancashire. [Cmd. 4626]. Price, 2*d.* (2½*d.*).

In Scotland. [Cmd. 4959]. Price, 3*d.* (3½*d.*).

Overwinding Prevention :

Report of Departmental Committee (1935). Price, 9*d.* (10*d.*).

Metalliferous Mining :

Report of Professor Henry Louis as to the possibilities of developing the production of gold and other minerals in Merionethshire. Price, 3*d.* (3½*d.*).

Report by the Advisory Committee for the Metalliferous Mining and Quarrying Industry on the possibilities of developing or of reviving the working of metalliferous and associated deposits in Great Britain. Price, 6*d.* (7*d.*).

Qualifications of Colliery Officials :

Report to the Secretary for Mines of the Committee appointed by him to inquire into the qualifications and recruitment of Officials of Mines under the Coal Mines Act. Price, 2*s.* (2*s.* 2*d.*).

OTHER PUBLICATIONS—*continued.*

Reorganisation :

Coal Mines Reorganisation Commission. Report to the Secretary for Mines. [Cmd. 4468]. Price, 6*d.* (7*d.*).

Rescue Regulations Committee :

Report of the Departmental Committee appointed to investigate the existing arrangements for the Provision and Maintenance of Rescue Appliances and for the Formation and Training of Rescue Corps and Brigades. (1926). Price, 1*s.* 6*d.* (1*s.* 7*d.*).

Safety Pamphlets :

No. 4A. Firedamp. How it can be Detected and Measured by means of the Flame Safety Lamp. With 6 Photographs of Gas Caps as seen in Spirit Lamps with Round Wick. Price, 6*d.* (7*d.*).

No. 4B. Firedamp. How it can be Detected and Measured by means of the Flame Safety Lamp. With 6 Photographs of Gas Caps as seen in Oil Lamps with Flat Wick. Price, 6*d.* (7*d.*).

No. 5. Fencing and other Safety Precautions for Machinery at Mines. Price, 6*d.* (8*d.*).

No. 6. The use of Chains and other gear for hauling and lifting. Price, 6*d.* (8*d.*).

No. 7. First Aid at Mines. Price, 3*d.* (4*d.*).

No. 8. Electric Signalling Systems and Telephones in Mines. Price, 3*d.* (3½*d.*).

Safety in Mines Research Board :

A selection of the Board's publications is given below and a full list will be supplied on application to the Board's Secretary, Mines Department, Dean Stanley Street, Millbank, London, S.W.1.

REPORTS OF COMMITTEES.

Electrical Exploders for Shot-firing in Coal Mines. (A Report of a Sub-Committee of the Explosives in Mines Research Committee.) S.M.R.B. Paper No. 11 (1925). Price, 1*s* (1*s.* 1*d.*).

The Testing of Explosives for Use in Fiery Coal Mines. (A Report by the Explosives in Mines Research Committee.) S.M.R.B. Paper No. 51 (1929). Price, 2*s.* (2*s.* 2*d*).

Haulage Accidents in Coal Mines. (A Report by the Haulage Committee of the Safety in Mines Research Board.) S.M.R.B. Paper No. 66 (1931). Price, 6*d.* (7*d.*).

International Conference on Safety in Mines at Buxton, 1931. S.M.R.B. Paper No. 74 (1932). Price, 1*s.* 6*d.* (1*s.* 8*d.*).

Simultaneous Shotfiring. (A Report by the Shotfiring Sub-Committee of the Explosives in Mines Research Committee.) S.M.R.B. Paper No. 85 (1934). Price, 6*d.* (7*d.*).

The Support of Underground Workings.—Reports by the Support of Workings in Mines Committee on the practice in various coalfields :—

East Midlands, S.M.R.B. Paper No. 30 (1927). Price, 6*d.* (9*d.*).

South Midlands and the South of England, S.M.R.B. Paper No. 45 (1928). Price, 2*d.* (5*d.*).

Lancashire, Cheshire and N. Wales, S.M.R.B. Paper No. 55 (1929). Price, 2*d.* (5*d.*).

North of England, S.M.R.B. Paper No. 61 (1930). Price, 2*d.* (5*d.*).

OTHER PUBLICATIONS—*continued.*

TECHNICAL PAPERS.

Firedamp Explosions.

No. 53. The Ignition of Firedamp (A revision of S.M.R.B. Paper No. 8 of 1925), by H. F. Coward and R. V. Wheeler (1929). Price, 6*d.* (8*d.*).

No. 69. The Ignition of Firedamp by Coal-Mining Explosives, Part I.—Gallery Experiments, by H. C. Grimshaw and W. Payman (1931). Price 1*s.* 6*d.* (1*s.* 8*d.*).

No. 70. The Ignition of Firedamp by the Heat of Impact of Coal-cutter Picks against Rocks, by M. J. Burgess and R. V. Wheeler (1931). Price, 9*d.* (10*d.*).

No. 80. The Ignition of Firedamp by the Filaments of Broken Electric Lamp Bulbs, by G. Allsop and T. S. E. Thomas (1933). Price, 6*d.* (7*d.*).

No. 81. The Prevention of Ignition of Firedamp by the Heat of Impact of Coal-cutter Picks against Hard Rocks, by M. J. Burgess and R. V. Wheeler (1933). Price, 6*d.* (7*d.*).

No. 82. The Movement of Flame in Firedamp Explosions, by H. F. Coward and R. V. Wheeler (1934). Price, 1*s.* 6*d.* (1*s.* 8*d.*).

No. 86. An Automatic Firedamp Recorder, by H. Lloyd (1934). Price, 6*d.* (7*d.*).

No. 89. The Ignition of Firedamp by Broken Electric Lamp Bulbs. The Appearance of the Filaments, by G. Allsop and R. V. Wheeler (1935). Price, 1*s.* (1*s.* 1*d.*).

No. 93. The Ignition of Firedamp by Compression, by (*the late*) H. B. Dixon and J. Harwood (1935). Price, 6*d.* (7*d.*).

Coal Dust Explosions.

No. 56. The Relative Inflammability of Coal Dusts; A Laboratory Study, by A. L. Godbert and R. V. Wheeler (1929). Price, 6*d.* (7*d.*).

No. 64. The Inflammation of Coal Dusts; the Effect of the Presence of Firedamp, by T. N. Mason and R. V. Wheeler (1931). Price, 6*d.* (7*d.*).

No. 73. The Combustion of Coal Dust, by A. L. Godbert and R. V. Wheeler (1932). Price, 9*d.* (10*d.*).

No. 79. The Inflammation of Coal Dusts : The Effect of the Nature of added Incombustible Dust, by T. N. Mason and R. V. Wheeler (1933). Price, 6*d.* (7*d.*).

No. 87. The Routine Method for Determining the Inflammability of Mine Dusts. A Modified Form of the Test, by A. L. Godbert (1934). Price, 6*d.* (7*d.*).

Spontaneous Combustion of Coal.

No. 75. Gob Fires, Part I.—Explosions in Sealed Off Areas in Non-Gassy Seams, by T. N. Mason and F. V. Tideswell (1933). Price, 1*s.* (1*s.* 1*d.*).

No. 76. Gob Fires, Part II.—The Revival of Heatings by Inleakage of Air, by T. N. Mason and F. V. Tideswell (1933). Price, 6*d.* (7*d.*).

Flameproof Electrical Apparatus.

No. 60. Flame-proof Electrical Apparatus for Use in Coal Mines. Summarising Report by I. C. F. Statham and R. V. Wheeler (1930). Price 6*d.* (8*d.*).

Mining Explosives.

No. 69. The Ignition of Firedamp by Coal Mining Explosives, Part I.—Gallery Experiments, by H. C. Grimshaw and W. Payman (1931.) Price 1*s.* 6*d.* (1*s.* 8*d.*).

OTHER PUBLICATIONS—*continued.*

Safety in Mines Research Board : (continued).

No. 84. Stemming Materials, by J. A. S. Ritson and H. Stafford (1934.) Price 6*d.* (7*d.*).

No. 88. The Pressure Wave sent out by an Explosive, Part III. Spark Photographs with Permitted Explosives, by W. Payman and D. W. Woodhead (1934). Price, 1*s.* (1*s.* 1*d.*).

No. 90. The Ignition of Firedamp by Coal-Mining Explosives, Part II.—Sheathed Explosives, by C. A. Naylor, W. Payman and R. V. Wheeler (1935). Price 9*d.* (10*d.*).

Falls of Ground.

No. 58. Steel Pit Props, by T. Ashley, S. M. Dixon and M. A. Hogan (1930). Price, 1*s.* (1*s.* 2*d.*).

No. 72. Tests on Timber Pit Props, by S. M. Dixon and M. A. Hogan (1931). Price 2*s.* (2*s.* 3*d.*).

Wire Ropes.

No. 41. Wire Ropes for Mines. Some Notes regarding their Manufacture and Use (1928). Price, 1*s.* (1*s.* 2*d.*).

No. 78. Measurements of the Kinetic Loads on Colliery Winding Ropes, by S. M. Dixon and M. A. Hogan (1933). Price, 1*s.* (1*s.* 1*d.*).

No. 92. The Deterioration of Haulage Ropes in Service, by S. M. Dixon and M. A. Hogan (1935). Price, 1*s.* (1*s.* 1*d.*).

Miscellaneous.

No. 91. A Recording Manometer having Low Inertia, by G. Allsop and H. Lloyd (1935). Price, 1*s.* (1*s.* 1*d.*).

INFORMATION PAPERS.

" What every Mining Man should Know " Series.

These are descriptive papers written in simple language to show how mining dangers arise, how various lines of research are being followed with the object of preventing accidents, and illustrating methods which are recommended as being the safest practice.

No. 1. Safety in Coal Mines : Some Problems of Research. Price, 6*d.* (8*d.*).

No. 2. Gas and Flame. Price 3*d.* (4*d.*).

No. 3. How Some Firedamp Explosions are Prevented. Price, 3*d.* (4*d.*).

No. 4. The Safe Use of Explosives in Coal Mines. Price 3*d.* (5*d.*).

No. 5. Explosion-proof Electrical Switchgear. Price 3*d.* (4*d.*).

No. 6. The Problem of Accidents from Falls of Ground. Price 3*d.* (4*d.*).

Safety Lamps :

Miners' Lamps Committee : Eleven reports and memoranda, of which particulars were given on page 187 of the Tenth Annual Report of the Secretary for Mines.

Report on Tests of Miners' Flame Safety Lamps fitted with open mesh gauzes, carried out at the Mines Department Lamp Testing Station Eskmeals. Price, 3*d.* (3½*d.*).

Report on Experiments carried out at the Mines Department Lamp Testing Station, Eskmeals, on Miners' Flame Safety Lamps fitted with Pyrophor Internal Relighters. Price, 4*d.* (4½*d.*).

Report on an Investigation at the Mines Department Testing Station, Sheffield, of the Safety of Miners' Electric Cap Lamps when the Battery is Short-circuited (1929). Price, 2*d.* (2½*d.*).

OTHER PUBLICATIONS—*continued.*

Signalling :

Report on an Investigation at the Mines Department Testing Station, Sheffield, of the Safety of Certified Mine Signalling Bells when Connected in Parallel. Price, 6*d.* (7*d.*).

Testing Memoranda :

No. 1. Safety Lamps. Price, 2*d.* (2½*d.*).
No. 2. Explosives. Price, 1*d.* (1½*d.*).
No.*3. Rescue Apparatus.
No. 4. Flameproof Electrical Apparatus. Price, 2*d.* (2½d.).
No.*5. Shot-firing Apparatus.
No.*6. Signalling Apparatus.

Trade and Commerce :

Report of the British Coal Delegation to Sweden, Norway and Denmark (1930). [Cmd. 3702.] Price, 9*d.* (10*d.*).

Exchange of Notes between H.M. Government in the United Kingdom and the Government of the German Reich. London, April 13th, May 3rd, 1933. [Cmd. 4319]. Price, 2*d.* (2½*d.*).

Agreement and Protocol between the Government of the United Kingdom and the Government of Denmark. London, April 24th 1933 (with Exchange of Notes of May 17th 1933). [Cmd. 4424]. Price, 6*d.* (7*d.*).

Convention between the Government of the United Kingdom and the Government of the Argentine Republic, with Protocol. London, May 1st, 1933. [Cmd. 4492]. Price, 3*d.* (3½*d.*).

Supplementary Agreement between the Government of the United Kingdom and the Government of the Argentine Republic with Protocol. Buenos Aires, September 26th, 1933. [Cmd. 4494]. Price, 1*s.* (1*s.* 1*d.*).

Agreement between the Government of the United Kingdom and the Norwegian Government, with Protocol and Exchange of Notes. London, May 15th, 1933. [Cmd. 4500]. Price, 9*d.* (10*d.*).

Agreement between the Government of the United Kingdom and the Government of Sweden, with Protocol and Exchange of Notes. London, May 15th, 1933. [Cmd. 4421]. Price, 9*d.* (10*d.*).

Agreement between the Government of the United Kingdom and the Government of Iceland, with Protocol. London, May 19th, 1933. [Cmd. 4331]. Price, 2*d.* (2½*d.*).

Agreement between the Government of the United Kingdom and the Government of Finland, with Protocol. Helsingfors, September 29th, 1933. [Cmd. 4472]. Price, 1*s.* (1*s.* 1*d.*).

Agreement between the Government of the United Kingdom and the Government of the French Republic, with Protocols. London. June 27th, 1934. [Cmd. 4632]. Price, 6*d.* (7*d.*).

Agreement between the Government of the United Kingdom and the Lithuanian Government, with Protocol. London, July 6th, 1934. [Cmd. 4680]. Price, 2*d.* (2½*d.*).

Agreement between the Government of the United Kingdom and the President of the Republic of Estonia, with Protocol. London, July 11th, 1934. [Cmd. 4736]. Price, 6*d.* (7*d.*).

Agreement between the Government of the United Kingdom and the Government of Latvia, with Protocol. London, July 17th, 1934. [Cmd. 4753]. Price, 6*d.* (7*d.*).

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* Not on sale. Manufacturers or others desiring to submit apparatus for test may obtain copies from the Mines Department.

OTHER PUBLICATIONS—*continued.*

Trade and Commerce : (continued).

Exchange of Notes between the Government of the United Kingdom and the Government of the Netherlands. London, July 20th and July 30th, 1934. [Cmd. 4703.] Price, 1*d.* (1½*d.*).

Anglo-German Payments Agreement and Exchange of Notes. Berlin, November 1st, 1934. [Cmd. 4726.] Price 2*d.* (2½*d.*).

Anglo-Brazilian Payments Agreement. Rio de Janeiro, March 27th, 1935. [Cmd. 4864.] Price, 1*d.* (1½*d.*).

Anglo-Polish Agreement (with Protocol and Notes). London, February 27th, 1935. [Cmd. 4820.] Price 9*d.* (10*d.*).

Exchange of Notes between the Government of the United Kingdom and the Italian Government. Rome, April 27th, 1935. [Cmd. 4888.] Price, 2*d.* (2½*d.*).

Agreement between the Government of the United Kingdom and the Turkish Government, with Protocol. Angora, June 4th, 1935. [Cmd. 4925.] Price, 3*d.* (3½*d.*).

Agreement between the Government of the United Kingdom and the Uruguayan Government, with Protocol and Supplementary Agreement. London, June 26th, 1935. [Cmd. 4940.] Price, 3*d.* (3½*d.*).

Transport :

First Report of the Standing Committee on Mineral Transport (1929). [Cmd. 3420.] Price, 2*s.* 0*d.* (2*s.* 2*d.*).

Water Dangers Committee :

Report on the Prevention of Dangers from Accumulations of Water or other Liquid Matter. Price, 3*s.* (3*s.* 3½*d.*).

Welfare :

The Miners' Welfare Fund. Price, 3*d.* (5*d.*).

Miners' Welfare Fund. Report to the Secretary for Mines of the Departmental Committee of Enquiry (1931). [Cmd. 4236.] Price, 1*s.* 6*d.* (1*s.* 8*d.*).

Royal Commissions.

Royal Commission on the Coal Industry (1925) :

Volume 1. Report. [Cmd. 2600.] Price, 3*d.* (7½*d.*).
,, 2. (Parts A. & B.) Minutes of Evidence. Price, 25*s.* (26*s.*).
,, 3. (Appendices and Index). *Out of Print.*

Royal Commission on Mining Subsidence :

First Report. The Doncaster Area (1926). [Cmd. 2570.] Price, 3*d.* (3½*d.*).

Second and Final Report. [Cmd. 2899.] Price, 1*s.* 3*d.* (1*s.* 4*d.*).

The minutes of evidence taken before this Commission each day have been published in separate parts up to and including the 21st day. The prices can be obtained on application to H.M. Stationery Office.

The above-mentioned publications are on sale and can be obtained through any bookseller, or direct from H.M. Stationery Office at the following addresses :—

Adastral House, Kingsway, London, W.C.2; York Street, Manchester 1; 1 St. Andrew's Crescent, Cardiff ; 120 George Street, Edinburgh 2; and 80 Chichester Street, Belfast.

APPENDIX C.

LIST OF OFFICIAL COMMITTEES, ETC., IN CONNEXION WITH THE MINING AND QUARRYING INDUSTRIES. WITH MEMBERSHIP AS AT 1ST SEPTEMBER, 1935.

ADVISORY COMMITTEE FOR COAL AND THE COAL INDUSTRY.

Appointed under Section 4 of the Mining Industry Act, 1920.

(*Vacancy*)	*Chairman.*
Mr. W. Hargreaves	Representatives of Owners of Coal Mines.
Mr. M. F. Maclean, J.P.	
Sir A. Nimmo, K.B.E.	
Sir Evan Williams, Bart., LL.D., D.L.	
(*Vacancy*)	Representatives of Workers in or about Coal Mines.
(*Vacancy*)	
Mr. Herbert Smith, J.P.	
(*Vacancy*)	
(*Vacancy*)	
Mr. B. Talbot, J.P.	Representatives of Employers in other Industries.
Sir D. Milne Watson, M.A., LL.B., LL.D., D.L.	
Mr. B. Tillett	Representatives of Workers in other Industries.
Mr. A. G. Walkden	
(*Vacancy*)	
(*Vacancy*)	Representing Mining Engineers.
Mr. F. McAvoy	Representatives of Agents or Managers or Under Managers of Coal Mines holding First Class Certificates.
Capt. P. Muschamp	
(*Vacancy*)	Representing Coal Exporters.
Mr. H. C. Rickett, O.B.E.	Representing Coal Factors and Merchants.
Sir E. F. Stockton	Representing those sections of Commerce engaged otherwise than in the production and distribution of coal.
Mr. T. G. Arnold, J.P.	Representing Co-operative Traders.
Prof. Sir J. Cadman, G.C.M.G., D.Sc.	Representing the Medical or Other Sciences.
Prof. J. S. Haldane, C.H., M.D., D.Sc., F.R.S.	
(*Vacancy*)	

Mr. F. C. Starling, *Secretary.*

ADVISORY COMMITTEE FOR THE METALLIFEROUS MINING AND QUARRYING INDUSTRY.

Appointed under Section 4 of the Mining Industry Act, 1920.

MR. R. A. THOMAS, O.B.E., J.P., *Chairman.*

Major A. Hibbert, D.S.O., M.C.	Representatives of Owners of Iron Ore Mines and Quarries.
Mr. S. J. Lloyd, J.P.	
Mr. I. L. Johnson	
(*Vacancy*)	
Major W. D. Barratt	
Mr. H. Dack, O.B.E., J.P.	Representatives of Workers in or about Iron Ore Mines and Quarries.
Mr. C. Edmonds, J.P., F.G.S.	
Mr. H. Nixon, J.P.	
Mr. J. Pickavance	
Mr. W. Sherwood	

Mr. J. H. Bennetts	Representing Workers in or about Tin Mines.
Mr. E. J. Fox	Representing the Iron and Steel Industry.
Mr. A. Wilson, J.P.	Representing Owners of Lead and Zinc Mines.
Mr. A. Dalgleish	Representing Workers in or about Lead and Zinc Mines.
Prof. H. Louis, M.A., D.Sc., etc..	Economic Geologists and Mining Engineers.
Mr. F. Merricks, C.B.E.	
Mr. F. W. Harbord, C.B.E. ..	Metallurgist.
Mr. C. Cookson	Representing the Non-Ferrous Metal Trade.
Sir K. W. Goadby, K.B.E., M.R.C.S., L.R.C.P.	Representing Medical Science.

Mr. E. J. Meadon, *Secretary*.

Board for Mining Examinations.

Appointed under Section 8 of the Coal Mines Act, 1911.

Major D. H. Currer Briggs, J.P., M.A., Assoc.M.Inst.C.E. ..	Representatives of Owners, or Agents of Mines, or Managers of Mines or Mining Engineers.
Mr. Trevor L. Mort	
Mr. J. Hamilton	
Mr. F. L. Booth, O.B.E., J.P. ..	
Lt.-Col. G. A. Lewis, C.M.G. ..	
Mr. J. Wallwork, M.Inst.C.E. ..	
Rt. Hon. J. Brown, P.C., O.B.E., J.P.	Representatives of Workmen employed in Mines.
Mr. J. G. Hancock, J.P.	
Mr. Oliver Harris	
Mr. W. Lawther	
Mr. Herbert Smith, J.P.	
Mr. J. Allen Parkinson, C.B.E., M.P.	
Sir H. Walker, C.B.E., LL.D. ..	H.M. Chief Inspector of Mines.
Mr. T. Greenland Davies	H.M. Divisional Inspectors of Mines.
Mr. J. M. Carey, O.B.E., M.Inst. C.E.	
Prof. J. S. Haldane, C.H., M.D., D.Sc., F.R.S.	Persons eminent in Mining and Scientific Knowledge.
Sir R. A. S. Redmayne, K.C.B. ..	

Sir Richard Redmayne at present acts as Chairman of the Board.

Mr. G. Bridgmore Brown, R.D., *Secretary*.

Miners' Welfare Committee.

Appointed under the Mining Industry Acts 1920 to 1934.

Major-General The Rt. Hon. Sir Frederick Sykes, G.C.S.I., G.C.I.E., G.B.E., K.C.B., C.M.G., *Chairman*.

Mr. J. T. Browne	Nominated by the Mining Association of Great Britain.
Mr. Walter Hargreaves, LL.D. ..	
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APPENDIX D.—CHARTS.

CHART I.—Weekly Output of Coal in Great Britain during each of the years 1931 to 1934.

CHART II.—Output and Exports of Coal and Average Selling Price at Pit and Port in Great Britain from 1873.

CHART III.—Price of Coal at Pit and Port and Index Number of Wholesale Coal Prices during 1931, 1932, 1933 and 1934.

CHART IV.—Distribution by Causes of Persons Killed and Seriously Injured.

CHART V.—Number of Deaths from Accidents per 1,000 Persons Employed at Coal and Metalliferous Mines in Great Britain from 1873, expressed as a percentage of the average rates per 1,000 persons employed below and above ground, respectively, in the years 1900–1909.

CHART VI.—Mean Annual Death Rate from Accidents per 1,000 Persons employed at Coal Mines in the Principal Producing Countries for the Periods 1913 to 1922, 1923 to 1932 and the year 1933.

CHART VII.—(*a*) Coal Cutting Machines and (*b*) Safety Lamps in use at Coal Mines in Great Britain.

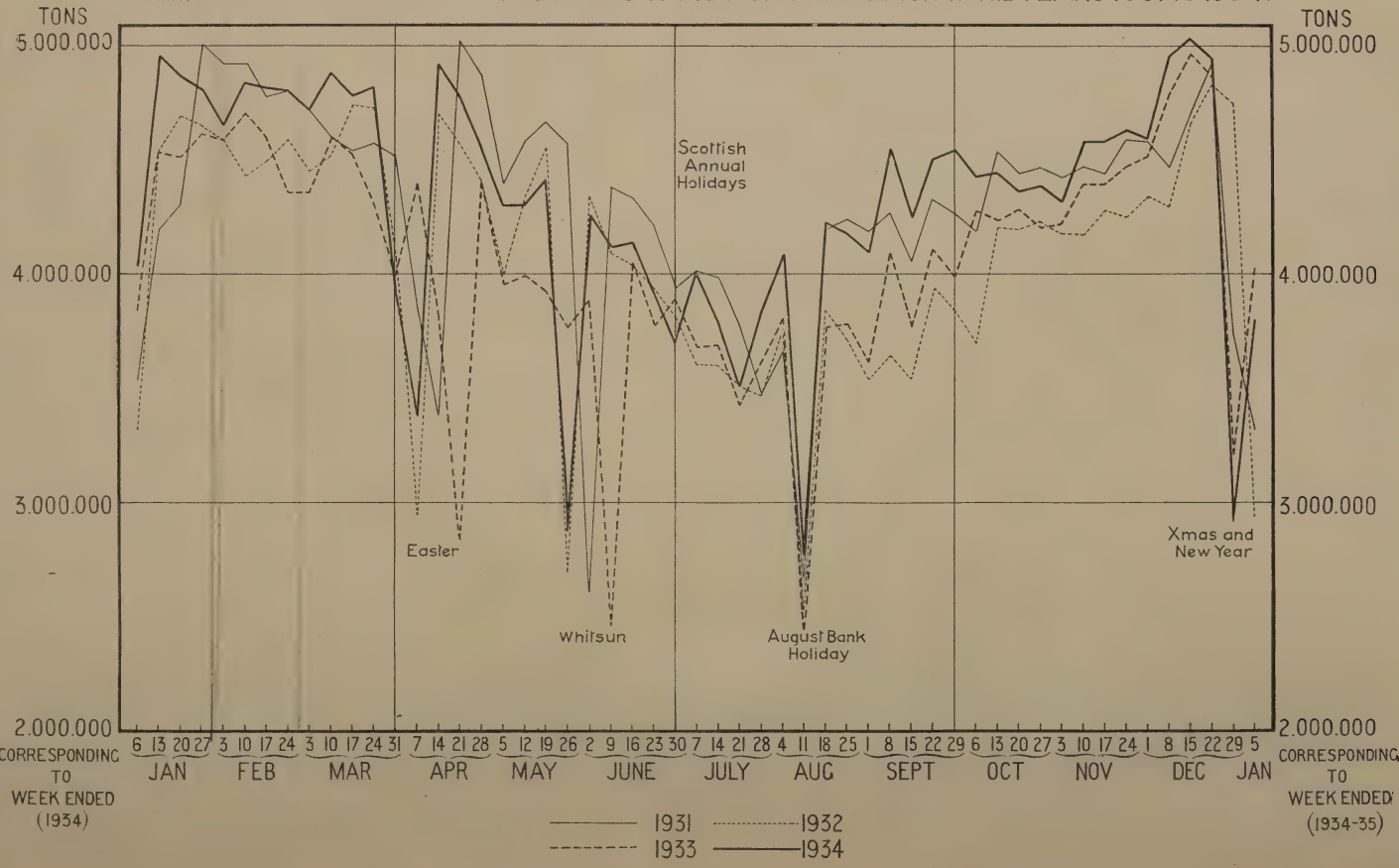
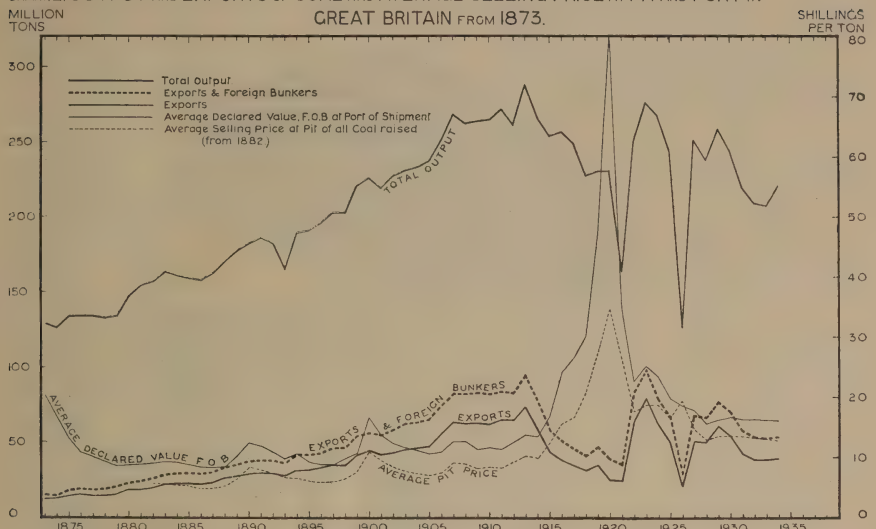


CHART.I. WEEKLY OUTPUT OF COAL IN GREAT BRITAIN DURING EACH OF THE YEARS 1931 TO 1934.
TONS
5.000.000
4.000.000
3.000.000
2.000.000
Scottish Annual Holidays
Easter
Whitsun
August Bank Holiday
Xmas and New Year
6 13 20 27 3 10 17 24 3 10 17 24 31 7 14 21 28 5 12 19 26 2 9 16 23 30 7 14 21 28 4 11 18 25 1 8 15 22 29 6 13 20 27 3 10 17 24 1 8 15 22 29 5
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC JAN
CORRESPONDING TO WEEK ENDED (1934)
CORRESPONDING TO WEEK ENDED (1934-35)
1931
1932
1933
1934

CHART II. OUTPUT AND EXPORTS OF COAL AND AVERAGE SELLING PRICE AT PIT AND PORT IN GREAT BRITAIN FROM 1873.



NOTE: THE OUTPUT OF COAL IN IRELAND UP TO THE YEAR 1921 AND EXPORTS TO IRISH FREE STATE PORTS FROM 1st APRIL, 1923, ARE INCLUDED.

CHART III PRICE OF COAL AT PIT AND PORT AND INDEX NUMBER OF WHOLESALE COAL PRICES DURING THE YEARS 1931, 1932, 1933 AND 1934.

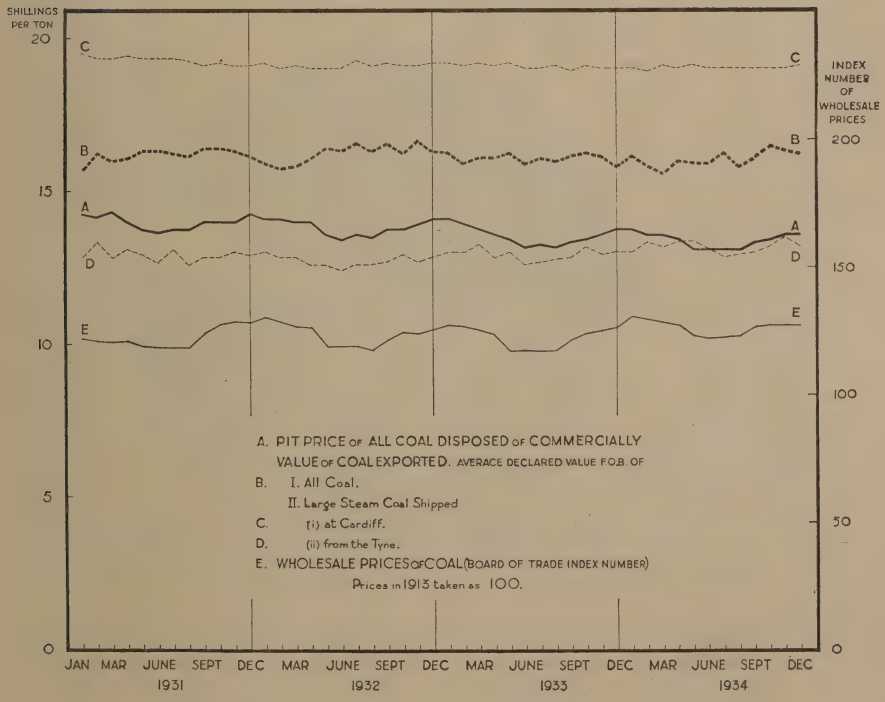


CHART IV.

COAL MINES ACT.

DISTRIBUTION BY CAUSES OF PERSONS KILLED AND SERIOUSLY INJURED.

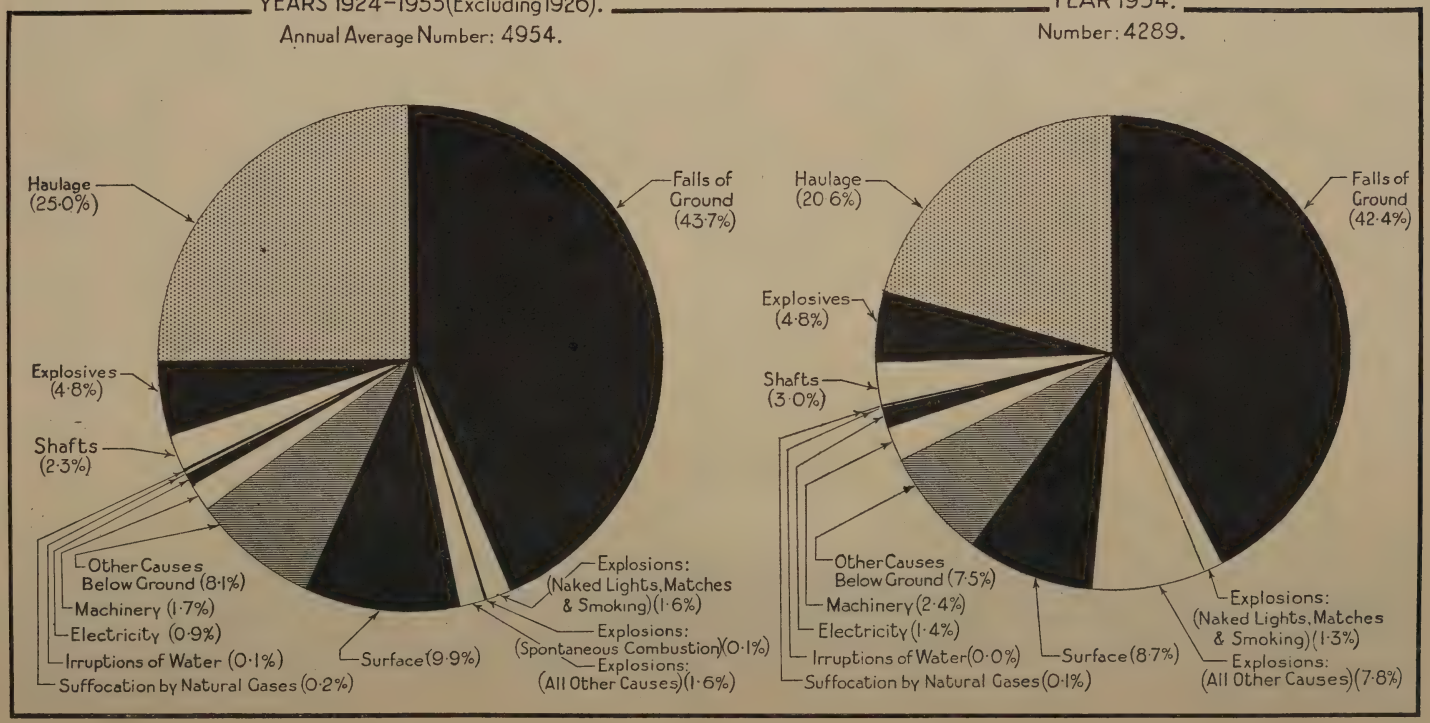
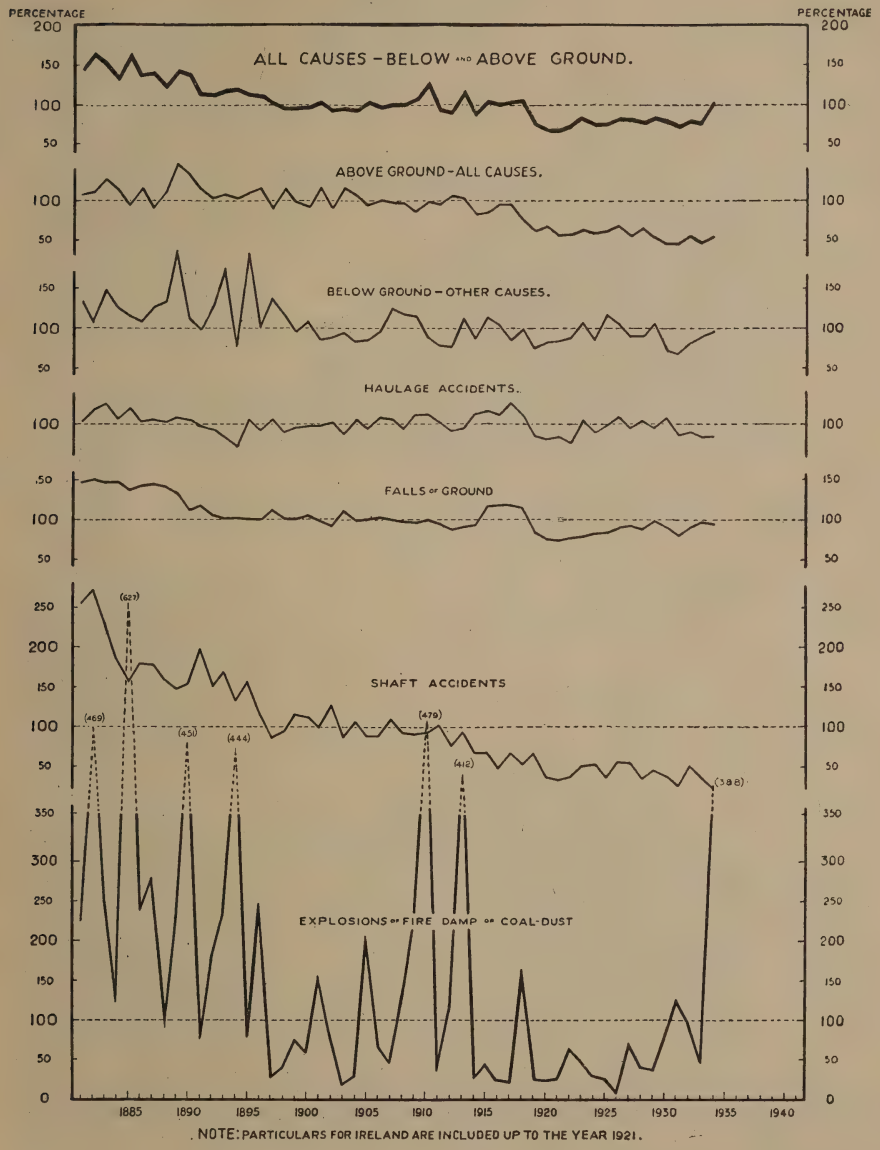
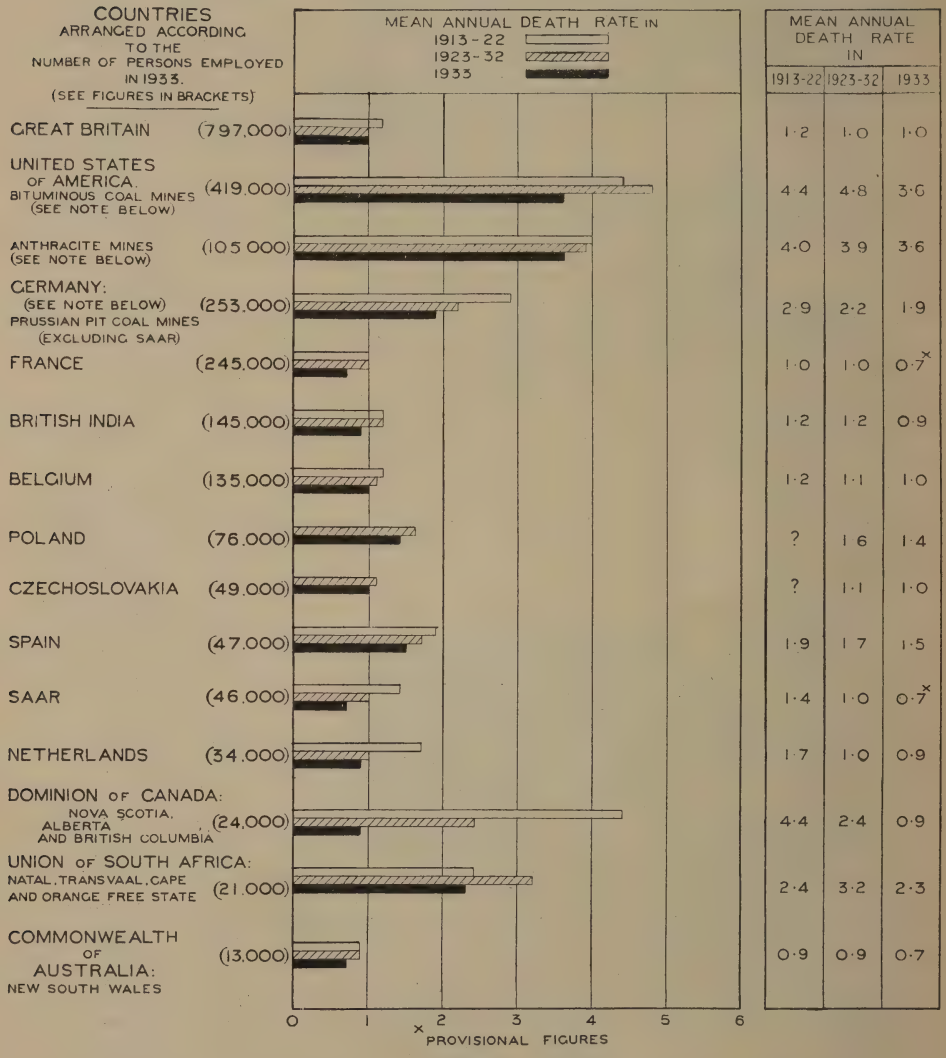


CHART V NUMBER OF DEATHS FROM ACCIDENTS PER 1,000 PERSONS EMPLOYED AT COAL AND METALLIFEROUS MINES IN GREAT BRITAIN FROM 1881 EXPRESSED AS A PERCENTAGE OF THE AVERAGE RATES PER 1,000 PERSONS EMPLOYED BELOW AND ABOVE GROUND RESPECTIVELY IN THE YEARS 1900-1909.



NOTE: PARTICULARS FOR IRELAND ARE INCLUDED UP TO THE YEAR 1921.

CHART VI. MEAN ANNUAL DEATH RATE FROM ACCIDENTS PER THOUSAND PERSONS EMPLOYED AT COAL MINES IN THE PRINCIPAL PRODUCING COUNTRIES. FOR THE PERIODS 1913 – 1922, 1923 TO 1932 AND 1933.



	MEAN ANNUAL DEATH RATE IN		
	1913-22	1923-32	1933
GREAT BRITAIN	1·2	1·0	1·0
UNITED STATES OF AMERICA. BITUMINOUS COAL MINES	4·4	4·8	3·6
ANTHRACITE MINES	4·0	3·9	3·6
GERMANY: PRUSSIAN PIT COAL MINES	2·9	2·2	1·9
FRANCE	1·0	1·0	0·7×
BRITISH INDIA	1·2	1·2	0·9
BELGIUM	1·2	1·1	1·0
POLAND	?	1·6	1·4
CZECHOSLOVAKIA	?	1·1	1·0
SPAIN	1·9	1·7	1·5
SAAR	1·4	1·0	0·7×
NETHERLANDS	1·7	1·0	0·9
DOMINION OF CANADA: NOVA SCOTIA, ALBERTA AND BRITISH COLUMBIA	4·4	2·4	0·9
UNION OF SOUTH AFRICA: NATAL, TRANSVAAL, CAPE AND ORANGE FREE STATE	2·4	3·2	2·3
COMMONWEALTH OF AUSTRALIA: NEW SOUTH WALES	0·9	0·9	0·7

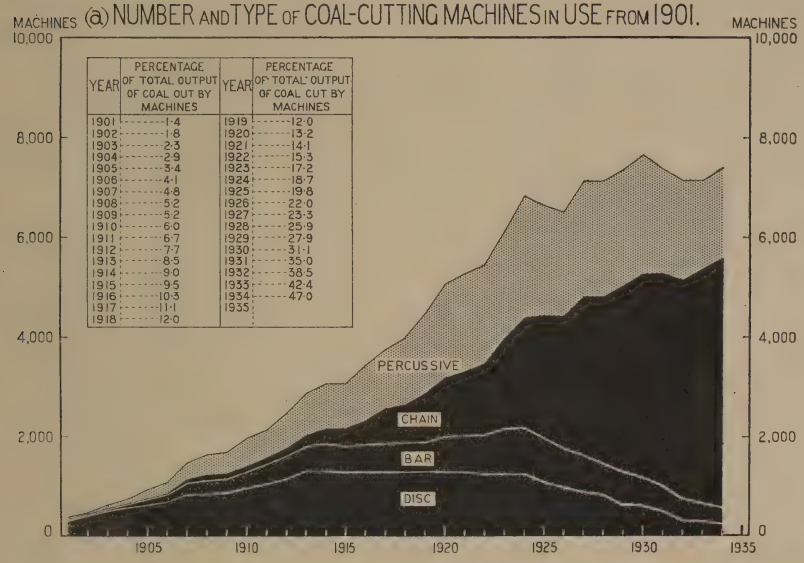
NOTES.

In some cases persons employed at mines other than coal mines are necessarily included, e.g., figures for Great Britain include particulars of stratified ironstone, shale and fireclay mines; and for New South Wales include shale mines. Colliery clerks are usually included in the case of British Dominions and Possessions as they are in Great Britain. In other countries they are usually not included.

In certain countries, e.g., Germany, the death-rates are calculated upon the relative number of "full time" workers, i.e., the number of men who would have been required had each one attended on every working day.

In the case of the United States of America a similar method of calculation is adopted owing to the irregularity of work at the mines. Here the death-rates are based on the assumption that continuous employment was found for a year of 300 days for the relative proportion of persons actually at work. Thus, if the average number of working days at the mines was 200, the death-rate is calculated upon two-thirds of the persons employed.

CHART VII. COAL-CUTTING MACHINES AND SAFETY LAMPS IN USE AT COAL MINES IN GREAT BRITAIN

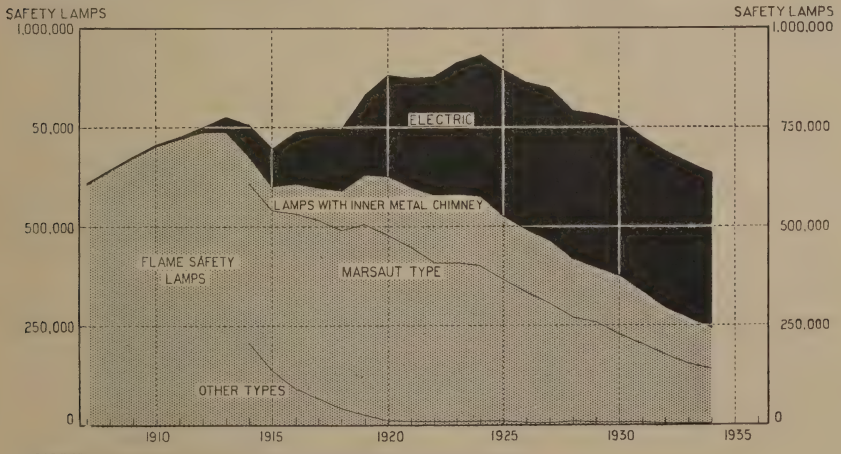


YEAR	PERCENTAGE OF TOTAL OUTPUT OF COAL CUT BY MACHINES	YEAR	PERCENTAGE OF TOTAL OUTPUT OF COAL CUT BY MACHINES
1901	1·4	1919	12·0
1902	1·8	1920	13·2
1903	2·3	1921	14·1
1904	2·9	1922	15·3
1905	3·4	1923	17·2
1906	4·1	1924	18·7
1907	4·8	1925	19·8
1908	5·2	1926	22·0
1909	5·2	1927	23·3
1910	6·0	1928	25·9
1911	6·7	1929	27·9
1912	7·7	1930	31·1
1913	8·5	1931	35·0
1914	9·0	1932	38·5
1915	9·5	1933	42·4
1916	10·3	1934	47·0
1917	11·1	1935	
1918	12·0		

(b) NUMBER AND TYPE OF SAFETY LAMPS IN USE FROM 1907

NOTE.—From 1st January, 1913, Safety Lamps of approved types only were required to be used by the Coal Mines Act, 1911, in those mines or parts of mines in which the use of Safety Lamps was prescribed by the Act or by the regulations of the mines. The three principal types of Safety Lamp in use are (*a*) Flame Lamps having an inner metal chimney, (*b*) Flame Lamps of the Marsaut type, and (*c*) Electric Lamps. Safety Lamps of types which are not approved are used solely in mines or parts of mines to which the Safety Lamps provisions of the Act of 1911 do not apply.

Classified particulars of Flame Safety Lamps in use prior to the year 1914 are not available.



NOTE.—Particulars for Ireland are included up to the year 1921.

These charts show the total equipment of the coal mines, whether Coal-cutting Machines or Safety Lamps, for the country as a whole subdivided so as to indicate the proportion of each kind in use.

The particulars relate to the end of the year except in the case of chart (*b*) where they relate to the middle of the years since 1929.

INDEX

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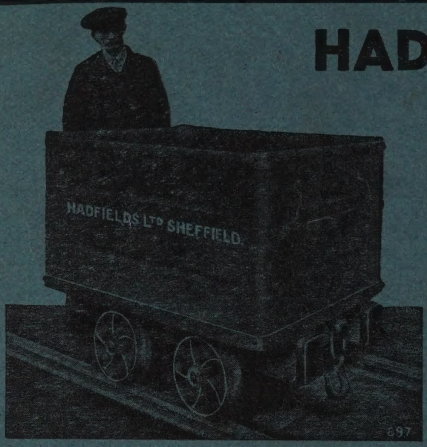

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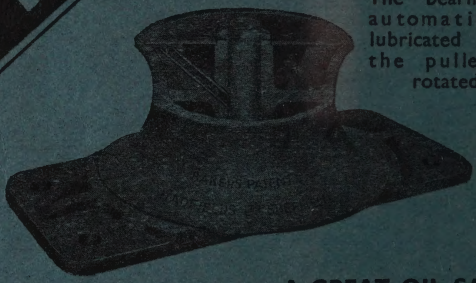
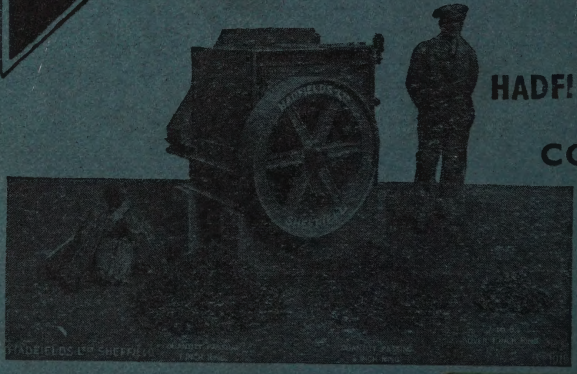


A GREAT OIL SAVER



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